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THE
JOURNAL
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ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.



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VOL. XVI.

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Fig. 1.



Fig. 2.



Fig. 4.



Fig. 3.



Fig. 5.

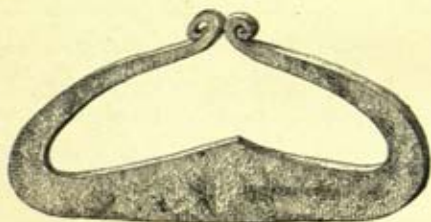


Fig. 6.

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THE JOURNAL
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FEBRUARY 9th, 1886.

FRANCIS GALTON, Esq., M.A., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From H. H. PRINCE ROLAND BONAPARTE.—Note sur les récents Voyages du Dr. H. Ten Kate dans l'Amérique du Sud.

From the AUTHOR.—Mensuration des crânes des Grottes de Baye. Par P. Topinard.

— Die Capacität und die drei Hauptdurchmesser der Schädelkapsel bei den verschiedenen Nationen. Von Hermann Welcker.

From the STATE BOARD OF HEALTH, &c., MASSACHUSETTS.—Sixth Annual Report. Supplement, 1884.

From the GOVERNMENT OF NEW ZEALAND.—Statistics of the Colony of New Zealand for the year 1884.

From the DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE.—Correspondenz Blatt, 1885. Nos. 11, 12.

From the BERLIN GESELLSCHAFT FÜR ANTHROPOLOGIE.—Zeitschrift für Ethnologie. 1885. Heft 5.

From the ARCHEOLOGICAL SOCIETY OF AGRAM.—Viestnik hrvatskoga Arkeologičkoga Društva. Godina VIII. Br. 1.

From the ACADEMY.—Atti della Reale Accademia dei Lincei. Vol. I, Fas. 28., Vol. II, Fas. 1.

From the ASSOCIATION.—The Journal of the Royal Historical and Archaeological Association of Ireland. No. 60.

From the CLUB.—Proceedings of the Berwickshire Naturalists' Club. Vol. X, No. 3.

From the SOCIETY.—Proceedings and Transactions of the Royal Society of Canada for the year 1884. Vol. II.

—Proceedings of the Royal Geographical Society, 1886. No. 2.

—Journal of the Royal Geological Society of Ireland. Vol. VI, Part 3. New Series.

—Transactions of the Asiatic Society of Japan. Vol. XIII, Part 2.

—Journal of the Society of Arts. Nos. 1730–1733.

—Bulletin de la Société Impériale des Naturalistes de Moscou, 1884. No. 4.

—VII. Jahresbericht der Geographischen Gesellschaft von Bern, 1884–1885.

From the EDITOR.—Nature. Nos. 846–849.

—Science. Nos. 152–155.

—Revue d'Anthropologie, 1886. No. 1.

—Revue d'Ethnographie, 1885. No. 5.

—L'Homme. Nos. 23, 24.

—Matériaux pour l'Histoire de l'Homme, 1886. Jan.

The election of the following new Members was announced:—

Professor OTIS T. MASON, of the Smithsonian Institution, Washington; Professor J. RANKE, of Munich; Dr. L. MANOUVRIER, of Paris; and Professor J. KOLLMANN, of Basel, as Honorary Members; and the Rev. W. BIRKS, of Wanstead Villa, Villier's Road, Southsea; J. G. BLUMER, Esq., of Satis House, Darlington; F. H. COLLINS, Esq., F.L.S., of Churchfield, Edgbaston, Birmingham; I. SPIELMAN, Esq., of 3, Westbourne Crescent; and T. L. WALL, Esq., of Leyland, Preston, as Ordinary Members.

Mr. HORACE DARWIN exhibited several Anthropometric Instruments made by the Cambridge Scientific Instrument Company.

M. COLLIN, of Paris, exhibited a Traveller's Box of Anthropometric Instruments.

Professor A. MACALISTER, F.R.S., exhibited a skull from an ancient burying ground in Kamtchatka.

The following Paper was read by the President:—

On RECENT DESIGNS for ANTHROPOMETRIC INSTRUMENTS.

By FRANCIS GALTON, F.R.S., President.

It is rather more than a year since I submitted, for criticism and discussion, the instruments that I employed in my temporary

instruments as I thought most suitable. The list that he enclosed of the desired objects of measurement, contained those of which I have just spoken.

Professor Giuseppe Sergi, of the University of Rome, writes to say that he desires to add to his anthropological cabinet a specimen set of instruments for use in schools. He enclosed a pamphlet in which his views on their utility are set forth, and desired me to select a list for him.

M. Topinard, professor of anthropology in Paris, whose experience of the art of measuring the linear dimensions of the living human body, and those of the skull and other bones, is unsurpassed, writes to me to the following effect upon what I have called the measurement of faculties:

I have written nothing as yet concerning physiological instructions to travellers, awaiting a convenient moment for doing so. I am disposed to take directly your system, and will ask to have all your apparatus sent to me. We possess no samples of colours for hair and eyes beyond the polychromatic table of Broca, which the Anthropological Institute employs, but I am about to undertake new work of this kind, and intend shortly to have some samples made; but not many of them, probably five for eyes and five for hair. My present difficulty is to select the exact shades and tints; if you have yourself made any such sets, I should be much obliged if you would let me have one.

I have also very lately received letters from two gentlemen who have just joined our institute, one of whom, Mr. Spielman, is already commencing a series of observations on a large scale, and both of whom are establishing anthropometric laboratories.

It is therefore obvious that a decision cannot be delayed as to the best instruments procurable for the above-mentioned purposes, in respect to facility of use, accuracy, portability, and cheapness. There is no finality in any design; I hope we shall always go on improving; but what is requisite now is to find the most satisfactory design that already exists or can at once be suggested, and to recommend its use until it shall be superseded by something distinctly better.

I will first ask your attention to the measurement of the head. Its object is to show, indirectly, how much and up to what age the brain continues to grow in bulk in different individuals, especially with a view of comparing the uneducated classes with those who are educated. It is well known that the size of the caps worn by university students much exceed that of the uneducated population, and it is therefore a matter of much interest to learn both generally and individually at what age the growth of the brain comes to a standstill under different circumstances. Unfortunately the measurement in question is difficult

to make with completeness. Craniologists, who are able freely to manipulate a skull, and have no trouble about varying thickness of skin and density of hair, and who see all the markings of the skull, have been long in coming to a general opinion, even if that is already reached, as to the best way of measuring it. Much less is it to be hoped that any general consensus will be arrived at soon as to the best way of measuring the living head. The maximum breadth of the head is easily taken by calipers or by sliding bars, if they are furnished with blunt teeth like a comb, in order to penetrate the hair and reach the skin. The maximum length of the head is also easily to be taken if we start from the glabella (the point between the eyebrows) or from the smooth spot above it. Probably it would be thought worth while to make both measurements. That from the glabella alone seems objectionable, because the frontal sinus grows rapidly in early adult life, and so far as it does this, a measurement that includes it would give an erroneous idea of the contemporary growth of the brain. The measurement of the height of the head is the great difficulty. It has to be taken at right angles to some very clearly defined plane of reference; and the question is, what plane of reference should be selected? The instrument I have used was made by Mr. H. Darwin and lies upon the table. It takes measurements from the plane that passes through two pairs of symmetrical points, namely, the two earholes and the upper and inner edges of the orbits, the latter affording an excellent catching place to hold a slight projection at the bottom of the instrument, without any risk of hurting the eyeball. The earholes are less satisfactory. It is a question whether a better plane of reference might not be found in that which passes through the upper edges of the orbits as before, and through the occipital tuber (or the inion), and to measure the height of the head by a perpendicular to that plane which crosses the earhole, or the middle of the tragus (the small portion of the external ear which covers the earhole as with a flap).

On these points I hope that the eminent craniologists present will favour me with their opinions and advice.

[The subject was subsequently discussed by Professors Flower, Macalister, and Thane, and by Dr. Garson, who all agreed that a plane of reference passing through the *lower* and outer edges of the orbits and the earholes was a good one, if the instrument was pressed firmly down against the edges of the orbit, by a band under the chin or otherwise. Mr. H. Darwin would alter the existing instrument so as to adapt it for this purpose. It was also agreed that the occipital tuber was not a good point of reference.—F. G.]

anthropometric laboratory at the International Health Exhibition, South Kensington, in 1884. Since then, further experience of their use, and the results of your discussion of them, have led to modifications and new designs. These I again desire to submit to your helpful criticism. They are made by the Scientific Instrument Company in Cambridge, whose two able directors, Mr. Horace Darwin and Mr. Dew Smith, have kindly acted as members of the small committee who superintended the measurements made with my instruments during the past year at Cambridge. They are therefore well qualified to design and carry out improvements in them. The other instruments on the table are those recommended by M. Topinard, Professor of Anthropology in Paris, for the use of travellers, and described by him in his *Anthropométrie Générale*. They are very ingeniously made and packed into a portable box, but with the exception of a dynamometer to test the strength of squeeze, they refer wholly to linear measurements of the body and its parts.

I have received numerous letters concerning the establishment of anthropometric laboratories at various places, and on the addition to laboratories that already exist, of apparatus to measure various faculties. A frequent desire is also expressed for instruments and instructions to measure the head. It is to these points—measurements of the faculties and measurements of the head—that I principally desire to call your attention now.

First of all, let us consider the *cui bono* of making any measurements at all. The chief object of them, as it seems to me, is to define the individual or the race, and to show in what way, and to what extent, he or it differs from others. So far as the individual is concerned, measurements teach him to know his own powers at any given time. The second important object is to keep watch over the development during the period of growth, and to give timely warning if it does not proceed normally. Just as the examinations in books, with which every student is now only too familiar, test the amount and progress of his intellectual acquirements, so these other examinations test his strength and swiftness, his keenness of sight, hearing, and touch; his colour sense, his power of distinguishing slight differences in musical notes, his quickness of response to stimulus, and not a few other elementary psychical facts.

The sort of letters that I receive may be best shown by examples. One that reached me about six weeks ago came from a Japanese professor in the University of Tokio, who had been educated and taken his degree at Cambridge, stating that his Japanese students had subscribed a sum of £36 for the outfit of an anthropometric laboratory, and he asked me to order such

Standards of colour for eyes and hair.—Printed tints, like those of Broca and of Chevreuil, fade, and it is very difficult to compare the colour of hair with any flat tint. I have suggested the use of glass in small discs for comparison with eyes, and the same glass spun by a glass-blower for comparison with hair. Mr. H. Darwin is preparing specimens of these.

Dynamometer.—The common dynamometer for squeeze of hand is untrustworthy, because the maximum power of the squeeze much depends on the size of the object, at the moment of maximum strain, being convenient to the grip. In the ordinary instrument a strong man soon brings the handles so nearly together that his maximum strain is exerted very disadvantageously to his muscles. Mr. H. Darwin has devised a new instrument to remedy this, but it is not completed.

Sight.—I lay on the table the pattern of the instrument I used for testing acuteness of sight, but shall not say anything now about it, as I understand that it has been criticised at Cambridge, and I hope that those objections will be re-stated here, and so far as possible remedied.

Last spring the interesting question of the relative acuteness of sight, among civilised and uncivilised people was forcibly brought forward by Mr. Brudenell Carter, and it was hoped that some very simple tests, such as travellers might successfully apply to wholly uneducated and suspicious barbarians, could be devised. A small committee of the Institute, including Mr. Brudenell Carter, considered the question on several occasions, but it was not found at that time possible to frame sufficiently simple tests that should cover all the points in which the total efficiency of the sight of a savage might be deemed to depend. For my own part, I am prepared to conform to the adage of "a half-loaf being better than no bread," and to content myself provisionally with an inquiry into the relative facility with which a single black dot near the corner of a square white card could be seen by men of various races, the position of the dot and the size both of the dot and of the card being specified. The test would be to expose the card as it rested on any one of its sides, and to require the observer to indicate in which of its corners the dot lay. Sometimes, as a so-called "puzzle case," the blank back of the card would be exposed. This test could be easily applied, and it would at all events tell us something; though it would not fully solve the question whether the efficiency of sight among savages in detecting distant objects was or was not generally superior to that of the civilized traveller who tested the card himself at the same time and under the same circumstances.

Colour-sense.—Mr. H. Darwin is engaged on a simple instru-

ment for testing the colour-sense. A singularly instructive account of a vast number of varied experiments made by another apparatus has just been published in *Brain*, and will, I understand, appear with very full details in *Mind*, by Dr. Cattell, a young American, who is now assistant in Professor Wandt's laboratory at Leipzig. The apparatus is in principle what photographers would call a drop shutter; its object is to give a very brief but measurable exposure of a colour of one or more letters, or numerals, or of a word. The instrument is applied to many purposes; that which now concerns us is the colour-sense. It appears that every object, whatever may be its colour, seems grey when looked at for a time a little less than one-thousandth of a second. When the exposure is prolonged the sense of colour begins to be excited, but it requires a longer exposure to see some colours than others. Measured in ten-thousandth parts of a second the averages are as follows:—Orange requires an exposure of 8; yellow of 10; blue of 12; red of 13; green of 14; and violet of 23, or nearly three times as much as orange. A very large number of experiments were made on seven persons, and in each case the figures were constant, but the individual differences were large. I find, in reducing Dr. Cattell's figures, that the relative sensitivity for red and violet also differed considerably among these 7 persons, and to the following extent: 1 case in which it was 14; 3 cases of 16; 1 of 17; 1 of 20; and 1 in which it was 23. Thus out of seven persons, one was relatively twice as sensitive to violet, as compared with red, as another. This instrument might, therefore, perhaps serve as a test of colour-sense, but it has physical adaptations as well. In the first place, it shows how many letters, numerals, or lines can be grasped by consciousness during a brief exposure, and this proves to be a very variable gift, certainly in some way connected with the general grasp of the mind, but this has to be experimented on further. In the second place, it seems that this instrument may perhaps afford a much desired measure of general nerve fatigue—it certainly affords one of eye fatigue, as the exposure has to be increased considerably after the eye becomes wearied. It is very probable that Dr. Cattell's instrument, in perhaps its rudest form, without an electro magnet, will be found of much future anthropometric service for general use.

Sound.—I wrote to Dr. Cattell, asking him what good instruments existed, to his knowledge, in Germany or elsewhere for giving a sound of standard loudness. He replies:—

As far as I know, no sound of standard loudness has been agreed upon. When I wished to specify the sound used in certain experiments, I let a ball of a given weight fall from a given

height, the material of the ball and the nature of the surface on which it fell being also given. The loudness of the sound in this case is not in proportion to the height from which it fell, multiplied into the weight of the ball, and into a constant depending on the material, as has been assumed. Vierordt (*Zeitsch. f. Biologie*, 1878) gave the formula $i = p \sqrt{h}$; Overbeck (*Wiedemann's Annalen* XIII) $i = p h^{.641}$. New experiments from our laboratory are about to be published.

Mr. H. Darwin has designed an instrument emitting a faint sound, suitable for testing the acuteness of hearing.

Distinction of Notes.—Dr. Cattell says :—

We have in the laboratory two excellent pieces of apparatus for testing the power of distinguishing notes. The one is an organ arrangement, which gives the notes at intervals of four vibrations from 32 to 1024. This is made by Appunn in Hanau a/M. and each octave costs, I think, about £20. The other apparatus is a set of tuning forks made by König, in Paris. Pairs of tuning forks are taken, one always gives the same note, the other (by means of weights) can be so regulated as to give a note a little lower or higher. Experiments on this subject are being made by three groups of students, and the results will be published (in Wandt's *Studien*) during the year. In one case, memory of notes is being especially investigated.

Mr. H. Darwin will submit a much less costly instrument than either of these, for the purpose of ordinary anthropometry.

I will now call upon him to explain the instruments in order, and will ask you to discuss each in turn.

Discussion.

Mr. BRUDENELL CARTER said he feared his objection to the proposed test for sight was a fundamental one. He regarded it not at all as a test of acuteness of vision, which was the thing desired, but only as a test of the acuteness of perception of slight differences in the intensity of light. The perceptive surface of the retina might be described as a mosaic composed of hexagonal elements, and he would assume, for the purpose of illustration, that the image of the entire card covered six of these elements. In that case, one retinal element would receive the image of one-sixth of the card. If the superficial area of the spot were one-twentieth of that of one-sixth part of the card, one of the six retinal elements would receive an image one-twentieth part less luminous than the images received by the other five elements; and thus, although the spot itself might not become an object of vision, its position on the card would be revealed, supposing that the retina was sufficiently sensitive to small differences of light for a difference of one-twentieth between adjacent parts of the whole image to be perceived. He contended that nothing was an accurate

test of acuteness of vision, unless it called upon the person tested to see the separateness of two or more objects, such as spots, which were separated from each other by intervals equal to their own diameters. The separateness of such objects did not become visible until their retinal images were so large that the image of the interval between them completely covered a single retinal element. Until this condition was fulfilled, two or more dots, although their position might be discoverable as a matter of luminosity, as in the familiar case of double stars, discoverable as single ones by the naked eye, could not be said to be either objects or tests of vision, properly so called. He hoped that the labours of the Committee on the subject were not concluded, and that they would be able to arrive at some simple and practical test composed of two or more dots or other objects.

EXHIBITION of ANTHROPOMETRIC INSTRUMENTS.

By HORACE DARWIN, Esq., M.A.

MR. HORACE DARWIN apologised for the incomplete state of the apparatus exhibited. He first showed an instrument for testing the keenness in distinguishing small differences in the pitch of a musical note. An organ pipe giving about the middle C was blown by a bellows. Its pitch could be altered by a known amount by changing its length. Constancy of air pressure is of considerable importance, and could easily be obtained with a more perfect bellows.

The next instrument shown was a chronograph made according to the design of the President, Mr. F. Galton, for measuring the quickness with which a person can press a lever after a sound signal is given. A wooden rod is supported at its upper end by a detent, and can be released at will. The rod then falls freely in space passing through a hole in a fixed diaphragm. A weight in the form of a ring, larger than the hole in the diaphragm, rests on a collar near the top of the rod. Thus, after rod and weight together have fallen a definite distance, the weight is caught by the diaphragm and makes the signal sound, while the rod still continues to fall. On hearing the signal sound the person to be tested presses down a lever, thereby releasing a spring clamp which grips the falling rod firmly. The interval of time between the signal sound and this operation is measured by the space the rod has fallen through, and is read at once in hundredths of a second from graduations on the rod itself.

The third instrument shown—designed at the suggestion of the President—was for measuring the relative sensitiveness of the eye to various colours in different persons. An object, such as a card, on which numbers are printed in diamond type, is fixed

against the side of a box and is viewed through a small hole in the opposite side of the box. The various colours are obtained by placing pieces of coloured glass in front of the hole. The diffused light falling on the card passes through an adjustable aperture and through a translucent screen at the end of the box. The illumination of the card can be varied by the adjustable aperture, and is proportional to its area.

To use the instrument, the person looks at the card through a piece of coloured glass, moves the adjustment till he can only just read the numbers, and notes the area from a scale. He does the same with any other coloured glasses. Now if daylight be used for illuminating the apparatus, the numbers obtained from the scale obviously depend on the brightness of the day. It is therefore necessary either to use a standard illumination, or if daylight be used, to reduce the numbers to ratios. In this case it would be convenient to consider the observation with one particular colour as 100 and to reduce all other observations so as to maintain the original ratio.

The following instruments of Mr. Galton's design were also exhibited:

Apparatus for testing the judgment of the eye in estimating squareness, also for testing the power of dividing a line into two equal parts.

Head-spanners, for measuring length and breadth of the head and the height of the head above the plane passing through the holes in the ears and the ridge of the frontal bone above the eyes, to which reference has already been made.

Discussion.

MR. BRUDENELL CARTER inquired whether Mr. Darwin was acquainted with Professor Förster's instrument for the purpose of testing the acuteness of light perception. It consisted of a box, the interior of which contained a series of broad stripes, alternately black and white, as objects, and was illuminated either by lamp-light or daylight through a square opening which could be increased in area from one to sixteen hundred square millimetres. This instrument was useful in ascertaining the soundness or otherwise of the retina in cases in which vision was too much impaired to be tested in the ordinary way.

MR. JOSEPH JACOBS remarked that in all experiments with instruments for measuring sensation, variations are likely to arise owing to subjective differences of nerve fatigue, &c., in the subject at different times. Thus the same man might appear to have a limit of clear vision at 21 inches on one occasion, and at 24 at another. No improvements in instruments could obviate this source of error, which could be only eliminated in each individual by taking the average of a series of observations between different individuals by taking the observations under the same conditions. He would

observe that the instrument for measuring quickness of hearing did not directly achieve its purpose, for a certain appreciable time ("reaction time" the physiologists call it) elapsed between the hearing and the pressing down of the lever which arrested the fall of the rod. There was variation in "reaction time" as well as in quickness of hearing. Mr. Galton's instrument was only intended to measure the sum of these variables. To ascertain the quickness of hearing the "reaction time," to be ascertained by the method of Exner or other means, would have to be subtracted.

Dr. RAYNER said that he had an instrument for taking measurements of the skull and head, which, in addition to the graduated horizontal bar, with two sliding graduated vertical limbs, had on each of these last a smooth pointed traveller projecting one inch and reversible, so that interior measurements could be taken.

Professor FLOWER, Mr. C. ROBERTS, and Professor THANE, also took part in the discussion.

The following Paper was then read by the author:

The CEPHALIC INDEX.

By J. G. GARSON, M.D., F.Z.S., M.A.I., Mem. Corresp. Etm. Soc. d'Anthrop. de Paris. Lecturer on Comparative Anatomy, Charing Cross Hospital; Royal College of Surgeons of England.

THE cephalic index expresses in percentage the relative proportion which the breadth of the skull bears to the length, and is thus an exact method of indicating the general form of the skull in those two relations. Depending as it does on the measurement of length and breadth, it is at once evident that if a skull is to give the same index in the hands of different observers these diameters must always be measured in exactly the same way. Skulls being termed dolichocephalic, mesaticephalic or brachycephalic according as the cephalic index is low, medium, or high, it is likewise necessary, in order that these terms may always indicate the same form of skull, that each should have a certain fixed limit, otherwise a skull which is dolichocephalic according to one nomenclature may be mesaticephalic by another system, and *vice versa*. Till lately great differences in measuring the length and breadth, and of classifying the cephalic index have existed among anthropologists. With the advancement of anthropological science these differences are disappearing, and the time has come when we may hope to have an uniform system of measurement and of nomenclature. To obtain this great efforts are being made by

leading anthropologists in France and Germany, and it appears desirable that we in this country should do our best to assist them. For this purpose the Council of this Institute requested me to ascertain the views of anatomists in this country and to communicate with Prof. Topinard of Paris on the subject. As a result of these communications we have drafted a scheme of measurement and nomenclature which we have every reason to believe will be generally acceptable. It has been arrived at by mutual agreement and concession, and cannot be said therefore to be the system of one person or nation, as modifications have been proposed by one side and by the other, and the methods and divisions of all anthropologists have been carefully considered in order to produce a result which would harmonise with the ideas of anthropologists generally. The questions which have had to be considered in relation to the subject are three in number, viz.: 1st, the standard of measurement to be used; 2nd, the method of measuring the length and breadth; and 3rd, the division and nomenclature of the index. The draft agreement we have arrived at on each of these I shall now proceed to explain and submit to your criticism.

In all linear measurements the metric system is to be adopted. This is now almost universally done by anthropologists as well as other scientists in this country. To secure uniformity, however, it was necessary to indicate our adherence to the international standard of linear measure, of all departments of science. The cephalic index to be estimated from the measurements of maximum length and breadth of the skull. The maximum length to be measured from the most prominent point on the glabella in front to the most prominent point of the occiput behind, in the mesial plane. The maximum breadth to be measured between the most prominent points on the lateral walls of the skull, wherever these points may be situated, except on the mastoid processes, the points being in the same horizontal plane and at right angles to the length-axis.

The measurements of length and breadth have of late years been made for the most part as above defined in this country as well as by those who have followed Broca's system and the Frankfurt agreement. Several anthropologists in England used, however, to calculate the cephalic index from the length measurement between the ophryon in front and the most prominent point on the occiput behind. When calculated from this measurement of length the index is higher in most skulls, particularly those of males, than when the glabella is included. This proceeding has, I think, now been abandoned.

In measuring the maximum length care must be taken that the length axis is in the middle plane. It sometimes happens that

the two lateral halves of a skull are perceptibly unsymmetrical, and that the greatest length is situated not in the middle line but to one or other side of it, the actual maximum length of such a skull is not the maximum *mesial* length and consequently is not to be used in calculating the cephalic index, which in all cases must be calculated from the latter. In measuring the maximum breadth some care and practice are required to hold the calipers in the proper position while finding the points of maximum width—that is, transversely to the length-axis and also at right angles horizontally to the mesial plane of the skull.

The cephalic index to be divided into groups each containing five units. Seven of these groups to be named and to have the following limits. Mesaticephalic from 75 up to 80, Dolichocephalic from 70 up to 75, Brachycephalic from 80 up to 85, Hyperdolichocephalic from 65 up to 70, Hyperbrachycephalic from 85 up to 90, Ultradolichocephalic from 60 up to 65, Ultrabrachycephalic from 90 up to 95.

NOTE 1.—In cases where the cephalic index is beyond these groups, others, consisting of five units, may be formed at each or either end of the named series.

NOTE 2.—The termination of each group is exclusive of the number indicating its highest limits; thus the termination of the mesaticephalic group is 79.99, the brachycephalic group includes skulls with an index of 80.

Anatomists agree in regarding 77 as the mean cephalic index of the human skull, and both in England and Germany the mesaticephalic group has been defined for some years past as ranging from 75-80. More recently anthropologists in France have, through the exertions of Prof. Topinard adopted these limits also.

This generally accepted central group we propose to take as a convenient starting point for other divisions of the cephalic index. The practical convenience of having all of these groups of the same dimensions—that is, including the same number of units—recommended itself so strongly that there was no doubt as to the advisability of adopting this principle and applying it to all classes into which it might be considered necessary to divide the index. The next question which naturally had to be considered was the number of divisions it was desirable to make. In previous classifications the number has varied from three to five. For merely classifying the skulls of any race according to the average cephalic index, five divisions would be amply sufficient to indicate the general form of the skull in the race as a whole. But several anthropologists have shown that more minute study of the cephalic index is necessary, as important information can be derived from analyses of its variations in each particular

race as is done by the system of seriation¹. This indicated to us that in our classification we should adopt, if possible, such a system as would admit of a combination of the synthetical and analytical methods of examination. For this purpose five divisions, each including five units, is inadequate, as anthropologists who have had much to do with very dolichocephalic or brachycephalic skulls can testify. The quinary divisions require to be extended as far in each direction as there are indices to classify. Normal skulls with indices as low as 53 and as high as 98 have been recorded, so that to include these extreme forms the divisions of the index would require to extend from 50 to 100. As skulls with indices below 60 and above 95 are very rare, it has been considered unnecessary to give distinctive names to any groups beyond these limits. Analyses of the indices of skulls outside these groups may be efficiently made by stating the limits of the quinary division in which they come, or the number of the group above or below the central one. The nomenclature applied to the seven groups named is simple and not likely to lead to confusion, the first group below and above the mesaticephalic being termed dolichocephalic and brachycephalic respectively. The second group on each side has the prefix *Hyper* added to the words dolichocephalic and brachycephalic which will be sufficient to indicate their respective positions, while the last-named or third group on either side is called *ultradolichocephalic* and *ultrabrachycephalic* respectively. The following is a list of these groups and their limits arranged in tabular form:—

TABLE I.

3. Ultra-dolichocephalic	....	60 to 65 excl. i.e. 64.99
2. Hyper-dolichocephalic	....	65 to 70 excl. " 69.99
1. Dolichocephalic	....	70 to 75 excl. " 74.99
0 Mesaticephalic	....	75 to 80 excl. " 79.99
1. Brachycephalic	....	80 to 85 excl. " 84.99
2. Hyper-brachycephalic	....	85 to 90 excl. " 89.99
3. Ultra-brachycephalic	....	90 to 95 excl. " 94.99

These divisions which we purpose to adopt correspond very closely with the divisions of the index which have been made recently by anthropologists in Germany, particularly those of Professor Ranke, the chief difference being that in the German divisions the dolichocephalic indices are not subdivided into groups as we have done, all skulls with indices below 75 being classed as dolichocephalic. I think the probable explanation of this is that most of those who have taken an active part in arranging the nomenclature of the cephalic index in Germany have had chiefly to deal with brachycephalic skulls, consequently

¹ See Table II.

while recognising the importance of having several groups for these skulls, they have not been brought face to face with the necessity of having a corresponding number of groups for dolichocephalic skulls. The anthropological collections of England and France contain large numbers of skulls of this latter form as well as of the brachycephalic type, consequently we see more forcibly, perhaps, the necessity of having symmetrical groups on both sides of the central divisions, not only for analytical examination, but also for averages. I cannot adduce better evidence of this than by inserting the following table drawn up from statistics given in Professor Topinard's *Elements d'Anthropologie Générale*. The table will also indicate the method of analysis of the variations of the cephalic index, the frequency of skulls of each race in the several groups being expressed in percentage.

TABLE II.

	66 Long Barrow Skulls.	74 Round Barrow Skulls.	1000 Parisians.	1000 Bavarians.	100 Eskimo.
Ultradolichocephalic	3·	—	—	—	4·
Hyperdolichocephalic	28·8	—	·2	—	35·0
Dolichocephalic	62·2	4·	13·7	·8	51·
Mesaticephalic	6·	31·2	41·2	16·3	10·
Brachycephalic	—	41·9	35·7	52·7	—
Hyperbrachycephalic	—	22·9	9·8	26·9	—
Ultrabrachycephalic	—	—	1·3	3·1	—
95-100 excl.	—	—	·1	·2	—

As the principle of dividing the index into equal groups, including five units, seems to have been adopted by Professor Ranke in his system of nomenclature, and also in that of the Frankfort Agreement, we are led to hope that our fellow-workers in Germany may see the advantage to be derived uniting with us in establishing an international system of division and nomenclature of the cephalic index. At the desire of the Council of this Institute I have forwarded to Professor Ranke, as General Secretary of the German Anthropological Society, a copy of this draft scheme for the consideration of the Society.

Discussion.

Professor FLOWER made the following observations:—

To the first principle laid down in the scheme submitted by Dr. Garson, that of using the metric system, I have always adhered.

The third also coincides as far as the most important divisions are concerned, i.e., boundaries of the mesaticephalic, dolichocephalic, and brachycephalic groups, with that advocated and adopted

in my catalogue of the crania in the museum of the Royal College of Surgeons, and I am quite willing to adopt the further divisions of the two latter now suggested, in order to distinguish extreme forms of variation from the average.

As to the measure of length, if the glabella is adopted, as it seems to be, by the great majority of French and German craniologists, it will be necessary for the sake of uniformity to join, although I do so under protest. I have hitherto followed Rolleston and Barnard Davis, in taking the length from the ophryon in front, excluding the glabella, an accidental prominence caused by thickness of bone and development of air cells within, and having no relation to the true form of the cranium. All agree, when taking the so-called maximum breadth, to neglect the mastoid processes and supra-mastoid ridges, if they should be developed, as occasionally happens, so largely as to pass beyond the breadth of the cranium proper. To be consistent, the glabella, a prominence of exactly similar character, should be also excluded. Its inclusion gives a false appearance of greater length to certain races, as the Australians, and to male skulls over females, to old skulls over young ones, which does not exist in the real form of the brain cavity. It is urged that there is a difficulty in fixing the ophryon as an exact point to measure from, and this undoubtedly occurs in a few skulls, but these are quite exceptional. However, it is a case in which uniformity is so desirable—as upon this measurement the most important index depends—that the minority must, I suppose, yield to the majority.

Professor THANE said he had no hesitation in accepting in principle the three points submitted to the meeting by Dr. Garson. especially as they had received the approval of such eminent and representative anthropologists as Professors Topinard and Ranke. He considered that the *ophryo-occipital* length was preferable to the *glabella-occipital* for the calculation of the breadth-index, since the latter was a compound of two factors, both of which were variable, viz., the length of the cranial box and the prominence of the glabella, and the comparison of the form of the cranium in different individuals and races was rendered simpler and more correct if the glabellar prominence were excluded. On the other hand, it is stated by observers of much experience that at times practical difficulty and uncertainty are met with in obtaining the *ophryo-occipital* length, and in view of this circumstance and of the fact that the *glabella-occipital* length is universally adopted in France and Germany, as well as by many workers in this country, it seems that uniformity can only be attained by our accepting the standard proposed. With regard to the mode of classification, the most important point is the determination of the mesaticephalic group, and then the question of the number and range of the other groups becomes one of expediency only. As to the position of the middle group, there is now a general consensus of opinion among anthropologists, and an uniform division into groups of five units each is obviously convenient and appropriate. It is desirable, however,

that better and more distinctive terms should be found for the extreme groups.

Dr. BEDDOE heartily approved of the lines on which the proposed agreement was drawn, and particularly of the application of the leading divisional names (dolichocephalic and brachycephalic) to the numbers 70-75 and 80-85 respectively, and the abolition of such terms as sub-brachycephalic. He pointed out that Dr. Garson's scheme confined the unmanageably long words to the rarest cases, which was really a practical advantage.

Professor MACALISTER also joined in the discussion.

Sir WILLIAM TURNER, who could not be present, sent the following observations:—

I have read the paper "On the Cephalic Index," by Dr. Garson. With much of what he has written I agree, as it is in conformity with what I have been in the habit of doing in the craniometric researches which I have conducted; as may be seen in my Report on the Human Crania collected during the voyage of H.M.S. "Challenger" (*Zool. Chall. Exp.*, Part xxix, 1884). As regards his proposed division of crania into seven groups, each including five units, based on differences in the cephalic index, I would state that, in my opinion, any such proposed grouping ought to be qualified by the remark, that the divisions and the numbers selected as their respective limits are purely arbitrary. I would further state that if assent is to be asked for from craniologists to the propositions made in the paper, it should be accompanied by the proviso that this is only expected to be given so long as the subject retains its present aspect, but that each investigator is to hold himself free to develop the subject in such directions as may seem to him to be most likely to yield fruitful results.

[The following paper, read before the Anthropological Institute, on May 11, 1886, forms a sequel to Dr. GARSON'S preceding communication, and is printed in advance with the sanction of the Council, in order that the whole subject may be laid before the reader in a complete form.]

The INTERNATIONAL AGREEMENT on the CLASSIFICATION and NOMENCLATURE of the CEPHALIC INDEX.

By J. G. GARSON, M.D., F.Z.S., M.A.I. Lecturer on Comparative Anatomy Charing Cross Hospital; Royal College of Surgeons of England.

IN February last I had the honour to submit to this Institute for the criticism of its members the draft of a scheme for the classification and nomenclature of the cephalic index¹ which, as I then explained, was the outcome of negotiations on the subject

¹ See the preceding paper.

with Professor Topinard of Paris. These were undertaken by me, at the request of the Council, in response to a letter addressed by him to our President pointing out that it was very desirable that an agreement between anthropologists in Britain and France should be come to regarding the cephalic index.

In order that any agreement arrived at regarding this important subject might, if possible, become international instead of being confined to the two countries, the Council thought it desirable that as soon as negotiations between Professor Topinard and myself had proceeded so far as to permit of a scheme being drafted, I should communicate our proposals to Professor Ranke, General Secretary of the German Anthropological Society, through whom negotiations might be conducted with the signatories of the Frankfurt Verständigung, which I did with much pleasure. At the meeting of our Institute in February I was able to state that I had received a letter from Professor Ranke in which he said that personally he could fully agree with the proposed scheme and had submitted it to those who had drawn up and signed the Frankfurter Verständigung. The draft was submitted by Professor Topinard to the Société d'Anthropologie of Paris, about the same time as I brought it before this Institute.

The criticisms of the draft scheme by members of this Institute with which I was favoured were forwarded for consideration to Professors Ranke and Topinard, and those of the signatories of the Verständigung were forwarded to me by Professor Ranke, so that in finally determining upon an international agreement we have had before us the opinions of, I think I may almost say, all the leading anthropologists of Europe. From these being almost unanimously favourable to the scheme, there has consequently been little difficulty in determining its final form which is as follows:—

1. The metric system to be used exclusively in all linear measurements.

2. The cephalic index to be calculated from the maximum length and maximum breadth of the cranium; the maximum length being the distance between the most prominent point of the glabella of the os frontis in front, and the most prominent point of the os occipitis behind, in the mesial plane. The maximum breadth is the width across the broadest part of the cranium wherever that may be, except on the mastoid processes and the supramastoid ridges, measured vertically to the median plane, the points of measurement lying opposite to one another in the same horizontal plane.

3. The cephalic index to be divided into groups of equal dimensions, each containing 5 units and arranged symmetrically

on each side of a median or central division corresponding to the mean of the human species.

4. The central group to be denominated the *Mesaticephalic* division and to include indices from 75 to 79.9.

5. The quinary division below and above the central group to be termed *Dolichocephalic* and *Brachycephalic* respectively, the former having the limits of 70 to 74.9, the latter of 80 to 84.9.

6. The second quinary divisions—those on either side of the last two—to be termed *Hyper-dolichocephalic* and *Hyper-brachycephalic* with the respective limits of 65 to 69.9 and 85 to 89.9.

7. The third quinary divisions to be called *Ultra-dolichocephalic* and *Ultra-brachycephalic* respectively with limits of 60 to 64.9 and 90 to 94.9.

8. The quinary division of the cephalic index to be extended in each direction as far as there are indices to classify. These divisions may be designated by their limits or by the number of quinary divisions they are removed from the mesaticephalic division, that being considered zero, 0.

Collected in a tabular form the divisions and nomenclature agreed upon is as follows:—

3. Ultra-dolichocephalic	..	..	60 to 65 excl.
2. Hyper-dolichocephalic	..	..	65 to 70 "
1. Dolichocephalic	..	..	70 to 75 "
0. Mesaticephalic	..	..	75 to 80 "
1. Brachycephalic	..	..	80 to 85 "
2. Hyper-brachycephalic	..	..	85 to 90 "
3. Ultra-brachycephalic	..	..	90 to 95 "

I learn from Professor Topinard that anthropologists in France have received the agreement favourably. Adherence to it has been signed by 60 out of the 67, who signed the Frankfurt Verständigung, five of those who signed this latter being since dead, and one having withdrawn his name from it. I am glad to say that all anthropologists in this country with whom I have communicated have intimated their willingness to accept the scheme, notwithstanding the exception taken to some of the details, when the draft was submitted to them in February last. The objections raised then have been carefully considered, as already stated, along with those of anthropologists of other countries who have favoured us with their criticisms. In conclusion I now propose to say a few words regarding those recommended alterations which it has not been thought advisable to accept for various reasons. Professor Flower took exception to the measurement of length from which it was proposed and has now been finally decided to calculate the cephalic index. He stated

that he considered the ophryo-occipital length preferable to the maximum length. In this view he was only supported by Professor Thane in this country and Professor J. Lenhossek, of Buda-Pesth. In the face of the unanimous opinion of French anthropologists, of 59 German, Austrian and other anthropologists who have signed the agreement, and of the majority of anthropologists in this country, it was impossible to come to any other opinion than that we must adhere to the method of calculating the cephalic index defined in the draft scheme, except that the supramastoid ridges have been excluded as well as the mastoid processes.

The only other point regarding which there was a difference of opinion expressed in the Institute was the denomination of the two extreme groups—the ultra-dolichocephalic and ultra-brachycephalic. In place of these names, Professor Macalister recommended the revival of designations proposed by Professor Huxley several years ago, for extreme forms of crania, namely, *Mechistocephalic* and *Brachistocephalic*, on the ground that the term *hyper*, applied to the second group from the centre on each side, and *ultra* meant the same thing. This similarity of meaning has also been pointed out by Professor Thane and Professor Sergi, of Rome. Strong opposition was offered to the revival of Professor Huxley's terms in France, and it was thought preferable to adhere to the prefix "ultra," already proposed, than to introduce new words. The terms *hyper* and *ultra*, it will be observed, are used as prefixes, not as parts of compound words, and the difference of meaning intended to be conveyed by them will be readily appreciable, even by those who are not craniologists.

Professor Welcker has taken exception to several points of the scheme, and is the only anthropologist who does not see his way to accept the agreement. He proposes that the limits of the central group which are 75-79.9 be altered to 77-81.9, in other words, to make it include four units, and he then applies this module to the division of the other groups. The reasons why the module of five units was fixed upon and has been retained is very clearly and carefully pointed out by Topinard, in the *Bulletin de la Soc. d'Anthropol.* Séance du 18 Fév. 1886, to which I would refer those interested in the subject, and from which it will be seen that it was impossible to accept Professor Welcker's amendment.

I trust those anthropologists whose recommendations the committee have not seen their way to give effect to, may be convinced that we acted without prejudice, and have, in the agreement now registered (if I may use the term), the almost unanimous opinion of anthropologists on each point in question.

*Description of a Skull from an ANCIENT BURYING PLACE in
KAMTCHATKA.*

BY ALEXANDER MACALISTER, M.D., F.R.S., Professor of
Anatomy in the University of Cambridge.

THROUGH the kindness of Dr. Guillemard, I have received for the Cambridge Museum an interesting skull from Kamtchatka, obtained by him in 1882, on his visit to that country, with Mr. Kettlewell, in the yacht "Marchesa."

This skull had been washed out of an ancient burying-place during a freshet of one of the torrents flowing on the slopes of the Klutschewsk Volcano, and was picked up by a Russian medical man who presented it to Dr. Guillemard.

Comparatively few Kamtchadale skulls have been described, and this is peculiar in many respects. It is that of a female adult and has very loose coronal and squamous sutures, while the two parietals are completely united by a synostosis of the sagittal suture. In capacity the head is microcephalic. In shape it is tapeino-mesaticephalic, very slightly prognathous, megaseme and leptorhine.

The measurements are subjoined—

Capacity, estimated with shot	..	..	..	1290 ccm.
Greatest length, ophryo-occipital	..	..	..	174
" breadth, interparietal	..	..	..	134
" height, basio-bregmatic	..	..	..	130
Basi-nasal line	..	..	..	93.5
Basi-alveolar line	..	..	..	97
Orbital height	..	..	..	34
Orbital width..	..	..	..	37
Nasal height	..	..	..	42
Nasal width	..	..	..	20
Diameter between pterion and pterion	..	..	..	108
" " stephanion and stephanion	..	..	..	110
" " asterion and asterion	..	..	..	105
Length from opisthion to glabella	..	..	..	132
Minimum interorbital width	..	..	..	22
Facial breadth, at zygomatic point of maxilla	..	..	..	91
" " at external angular process	..	..	..	97
" " maximum bijugal	..	..	..	114
Height of posterior nares	..	..	..	18
Greatest width between the internal pterygoid plates	..	..	..	27

INDICES.

Height index	..	747	Breadth index	..	770
Orbital	..	919	Nasal	..	476
Alveolar	..	1032			

Of other peculiarities the following are noteworthy. There is a very "capsular" occiput, and the skull in *norma verticalis*, is pentagonal, ill-filled. The frontal bone is flat browed with a short trace of a frontal suture, a supraorbital hole on each side. A transverse green band of staining crosses the bone above the frontal eminences from stephanion to stephanion, as if the skull had been crossed by a copper band. The interorbital part of the frontal is singularly flat.

The union of the two parietals is nearly perfect, a slight superficial trace of the sagittal suture above the lambda being its only relic. There are two parietal foramina, one on each side, and a spheno-parietal suture of 9 mm. on each side.

The occiput has two large holes worn in its supra-occipital portions on each side of, and behind the foramen magnum, each nearly as big as the foramen. The condyles are worn, as if ground off, so is the prominent jugular process, and the small mastoid process of the temporal.

The posterior nares are particularly small and oblique. The palate is long, medially ridged.

The only remaining teeth are the first and second molars of the right side which are much worn; the others have fallen out.

We have not much information as to the race characters of the inhabitants of N.E. Asia. The available sources known to me are from the records of Capt. Cook's last voyage, Kennan's "Tent-life in Siberia," and Rettich's "Ethnographie Russland." From these we gather that the inhabitants of the Peninsula are of three tribes: to the north are the Tschukches, supposed to number about 7,000, a brachycephalic race with oval faces, prominent occiputs, and projecting brows. In the middle region, south of Cape Pokatchanik, the inhabitants are Koriaks (*Kora* = reindeer) a smaller but still broad-headed people, with large heads and mesoseme orbits. To the south of these live the true Kamtchadales, a people quite distinct from their neighbours, who call themselves Itelm, (= the people) and disown the nickname Kamtschale (= dirty, in Koriak). They are described as a rapidly diminishing people. The adventurer, Beniowsky, who led their revolt against the Russians in 1771, says that there were 70,000 Itelm when Atlasoff subdued them in 1699, and that they had become reduced to 11,000 in 1771. In 1853 they were said to number 7,331, and this number had become still further reduced to 5,846 in 1870. The facial appearance of this skull quite agrees with Capt. Gore's account, that the females are of pleasing countenance.

FEBRUARY 23RD, 1886.

FRANCIS GALTON, Esq., M.A., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors :—

FOR THE LIBRARY.

From the AUTHOR.—The Bushmen and their Language. By G. Bertin, Esq.

— The recent progress of Obstetric and Gynæcological Medicine. By Thomas More Madden, M.D.

— Die Masken in der Völkerkunde. By Richard Andree.

From Messrs. LONGMANS, GREEN, AND CO.—The Book of Genesis. By François Lenormant. Translated from the French.

From DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE. Correspondenz-Blatt, 1886. Nos. 1, 2.

From the SOCIETY.—Mittheilungen der Anthropologischen Gesellschaft in Wien. XV Band, 2 Heft.

— Journal of the Society of Arts. Nos. 1734–1735.

From the INSTITUTION.—Journal of the Royal United Service Institution. No. 132

From the EDITOR.—Nature. Nos. 850, 851.

— Science. Nos. 157.

— L'Homme, 1886. No. 1.

— The American Antiquarian, 1886. January.

The election of Dr. H. RAYNER, of the Asylum, Hanwell, was announced.

Mr. JOSEPH THOMSON exhibited a collection of photographs of Africans in the district of the Niger.

The following paper was read by the Secretary :—

On AUSTRALIAN MEDICINE MEN; or, DOCTORS AND WIZARDS OF SOME AUSTRALIAN TRIBES. By A. W. HOWITT, Esq., F.G.S., Cor. Mem. Anth. Institute.

I.

Introduction.

IN these notes on the Doctors and Wizards of some Australian tribes, I deal with instances taken from the Kurnai of Gipps Land, the Murring of Maneroo and the south coast of New South Wales, the Wolgal of the Tumut and Upper Murrumbidgee Rivers, the Wirajuri lower down the latter river to Hay,

the Wotjobaluk of the Wimmera River between Horsham and Mallee Scrubs, north of Lake Hindmarsh, the Jupagalk of the Richardson River and the Woiworung of the Yarra River. It will be seen, therefore, that my facts cover so large a portion of the south-eastern part of Australia that they may not unreasonably be held to apply in all probability, *mutatis mutandis*, to those parts which are left out, as, for instance, part of north-eastern and south-western Victoria. In these notes I have thought it best to record that information which I have collected myself, and to leave the large mass of facts which my correspondents have obligingly contributed as to the magical beliefs and customs which are found in other parts of Australia.

The tribes which I have named above have been the subject of previous memoirs communicated to the Anthropological Institute.

I have adopted the term Medicine Men as a convenient title for this memoir, but the term "Doctor" or "Blackfellow Doctor" is always used in Australia for those men in a native tribe who profess to have supernatural powers. This term is, however, not strictly correct, if by the word "doctor" we mean a person who uses some means for curing diseases. The powers which these men claim are not solely those of healing, nor even those of causing disease, but also such as may be generally spoken of as magical. Thus the doctors are in this sense magicians or wizards. In this paper I shall endeavour to distinguish between doctors and wizards; but I must point out that there are further subdivisions—so that, for instance, the wizards may be either men who profess to perform certain acts upon or for their fellow men (as, for instance, placing them under or relieving them from fatal spells), or men whose magical functions act upon the elements, as, for instance, in producing storm or rain during periods of drought.

I may roughly define doctors as men who profess to extract from the human body foreign substances, which, according to aboriginal belief, have been placed in them by the magic of other doctors, or wizards, or supernatural beings, such as Brewin of the Kurnai, or Ngarang of the Woiworung.

There then remains a class of men who are wizards proper, but who do not all profess to have the same powers or to exercise the same arts, and who may be said to follow different branches of the magical profession. Very near to these are rain-makers, the seers or spirit-mediums, such as the biraark of the Kurnai, and also those bards who employ their poetic faculties for purposes of enchantment—such as the Bunjil Yenjin of the Kurnai tribe.

Some men devote themselves to one branch, some to another,

of the art of magic, and thus arise what would be called amongst us "specialists," such as doctors who especially extract quartz crystals, or wizards who use them to injure other people.

At first sight the subject of these notes may seem to be a simple one, in so far that it might be said that the practices of the "Blackfellow Doctors" are no more than the actions of cunning cheats by which they influence others to their own personal benefit. But on a nearer inspection of the subject it becomes evident that there is more than this to be said. The doctors and wizards believe more or less in their own powers, perhaps because they believe in those of others. The belief in magic in its various forms, in dreams, and in omens and warnings is so universal and is so intimately mingled with the daily life of the aborigines that no one, not even among those men themselves who practise deceit, doubts the powers of the blackfellow doctors, or that if men fail to effect their magical purposes the failure is due to error in the practice, or to the superior strength and power of some adverse wizard.

Allowing for all conscious and intentional deception on the part of the wizard class, there still remains a certain residuum of faith in themselves which requires to be noticed, and if possible to be explained.

It is in this aspect that the question has shown itself most difficult to me. The problem has been, how to separate falsehood from truth, cunning imposture from *bond fide* actions, and deliberate falsification from fact. The statements which I have made in these pages are the result of long-continued inquiries as well as personal observation. I must say for my aboriginal informants that I have found them truthful in their statements to me whenever I have been able to check them by further inquiries, and in only one instance did I note any tendency to enlarge the details into proportions beyond their true shape. Even this instance was very instructive. The man's information as to the customs of his tribe, and especially as to the initiation ceremonies, I found to be very accurate, but it was when he began to speak of the powers of the old men of the past generation that I found his colouring too brilliant, and more especially as regarded his tribal father, the last great warrior-magician of the tribe. In his exaggeration of the exploits of these men one might see an instructive example how very soon romance begins to gather in an heroic halo round the memory of the illustrious dead.

II.

The Supernatural Powers claimed by the Doctors and Wizards.

The wizards were everywhere credited with the power of con-

veying themselves through the air, or of being conveyed by the ghosts from place to place, or from earth to sky. Numerous accounts have been given to me by blackfellows of the "going up" of these wizards. As might be expected, it occurred always at night, and the return of the wizard was frequently by means of a tree, down which he was heard to descend and finally to jump on to the ground. At times he returned attended by the ghosts, whose muffled voices and the sound of whose footsteps could be heard by the listening tribespeople. I need not enlarge on this subject here, as I shall have to return to the subject later on.

There is a belief in all the tribes I refer to that men of the wizard or doctor class (and therefore over at least a very large extent of south-eastern Australia) can project substances in an invisible manner against their victims. One of the principal projectiles is said to be *quartz*, especially in its crystallized form. Such quartz crystals are always carried as part of the apparatus of the blackfellow doctor, and are usually carefully concealed from sight, especially of women.

When travelling in the Darling River back country, before it was settled, I saw a very good instance. A blackfellow doctor accompanied me during a day's journey, and alarmed my two black boys by seemingly causing a quartz crystal to pass from his hand into his own body. Such sleight of hand as his is evidently indicated by the account given later on of the manner in which Muri-Kangaroo was trained for a wizard.

These quartz crystals are exhibited by the wizards at the initiation ceremonies. I have described this already elsewhere and need not repeat it.¹ Of all magical substances the crystal of clear and translucent quartz holds the first rank in the estimation of the Australian aborigines. Yet in the central clans of the Kurnai tribe the black stone called *bulk*² is more regarded, and as far as this particular community is concerned, it is only among the Brataua Kurnai and the eastern Krauatun Kurnai, who adjoin the Kulin and Murring tribes respectively, that the quartz crystal is held in dread esteem.

The account which I shall give of the manner in which the Brataua Kurnai named Tankli became a blackfellow doctor brings the belief in the magical powers of the quartz crystal into full view.

Connected with the throwing of magical substances in an invisible form is the belief that they can be caused to enter the body of a victim by burying them in his footsteps, or even in

¹ On Some Australian Ceremonies of Initiation (Journ. Anthropol. Inst., vol. xiii., 1884).

² Kamilaroi and Kurnai, p. 251.

the mark made in the ground by his reclining body. Sharp fragments of quartz, glass, bone, charcoal are thus used, and rheumatic affections are very frequently attributed to them.

Another form of this belief is seen in the practice attributed to the western neighbours of the Woiworung of putting the cone of the *Casuarina quadrivalvis*¹ into a man's fire, so that the smoke might blow into his eyes and cause him to become blind.

In all these tribes a general, I may say almost an universal, practice has been to procure some article belonging to the intended victim. A piece of his hair, some of his fæces, a bone picked by him and dropped, a shred of his opossum rug, or at the present time of his clothes, will suffice, or if nothing else can be got he may be watched until he is seen to spit, when his saliva is carefully picked up with a piece of wood and made use of for his destruction (Wotjobaluk tribe).

The old beliefs are also adapted to their new conditions since the settlement of Australia by the whites. The Woiworung dreaded a practice attributed to the aborigines living about Echuca. It was said that they mixed pounded flesh of a dead man with cut-up tobacco, and offering this to the unsuspecting victim, caused him to fall under the fearful spell of death when he smoked the mixture. The result was believed to be internal swelling of the smoker until death ensued.

There is evidently a belief that doing an act to something which is part of a person, or which even only belongs to him, is in fact doing it to him. This is very clearly brought out by the remark of one of the Wirajuri, who said to me, "You see, when a blackfellow doctor gets hold of something belonging to a man and roasts it with things, and sings over it, the fire catches hold of the smell of the man, and that settles the poor fellow." This belief is evidently world-wide, and has no doubt existed throughout all time of human history. It culminated naturally in the roasting of waxen images, which for aught I know has scarcely yet died out in the British Isles.

The Kurnai practice is to fasten the article to the end of a throwing stick, together with some eaglehawk feathers, and some human or kangaroo fat. The throwing stick is then stuck slanting in the ground before a fire, and it is of course placed in such a position that by-and-by it falls down. The wizard has during this time been singing his charm; as it is usually expressed, he "sings the man's name,"² and when the stick falls

¹ The idea seems to be that the *eidolon* of the hard rough jagged cone will magically produce injury, such as the cone itself might do. This belief points to an attempted explanation of the acute agony of ophthalmia.

² The secrecy with which personal names are often kept from general knowledge, arises out of the belief that an enemy who has your name, has something which he can use magically to your detriment.

the charm is complete. This practice still exists. While writing this paper one of the Kurnai, whom I have elsewhere mentioned,¹ named Tankowilin, came to me to request the loan of a throwing stick which I have, and which is regarded as being of special power, having been used at an initiation ceremony.² He informed me that he wanted it in order to "catch" one of the tribe who had married a relation of his, a widow, without the consent of her kindred, and also far too soon after the death of her husband: indeed, so soon after that it had "made all the poor fellow's friends sad thinking of him." When I refused him the loan of the *mürriwün*, he said it did not matter, for that he and his friends had made "a very strong stick to point at him with by singing his name over it, and spitting strong poison over it."

The sense of the word poison as used here is not as we use it, but means "magic," or it might be expressed by the word "medicine," as applied among the North American Indians.

*The Gūliwill.*³—A good illustration of the practice of roasting things is afforded by the Wotjobaluk tribe, and which will also serve for their neighbours, the Jupagalk, and the more distant Wirajuri. The only difference in practice is that with most tribes the article is roasted attached to a throwing stick, while Wotjobaluk use a peculiar apparatus called a *gūliwill*, and the Jupagalk a "yamstick."

The *gūliwill* consisted of several small spindle-shaped pieces of Casuarina wood, on which marks were made, such as the effigy of the victim, and one of the poisonous snakes. These *gūliwill* were tied up tightly together with human fat and the article obtained from the intended victim, and then roasted for a long time, or several times at intervals. After the whites settled the country at the Wimmera river, the Wotjobaluk, who were

¹ Kamilaroi and Kurnai, p. 247.

² The Jeraeil of the Kurnai tribe. It is interesting to note that the throwing stick (*mürriwün*) is supposed to have inherent magical powers. It is not necessary to anoint it with fat, human or animal, as is the case with spears or clubs. I think the idea may be traced to the difference between throwing a spear by hand and throwing it by means of the *mürriwün*. The blackfellow perceives that the *mürriwün* gives the spear a surprising impetus, and not being able to explain its mechanical action, he considers that it is magical. This is a good instance of the manner in which the aboriginal mind works.

³ Apparently from *Gūli*=rage, anger, and not from *Gūli* or *Kūli*=man; as an example, the following:—

Gūli-gan, I am enraged.

Gūli-gara, thou art enraged.

Gūli-ga, he is enraged.

Gūli-yangal, we (two) are enraged.

Gūli-yanguo, we (all) are enraged.

Gūli-yangwūl, you (two) are enraged.

Gūli-gau-wotjawot, you (all) are enraged.

employed on the stations, as I am told, found the great chimneys of the huts, especially of that used as a kitchen, unrivalled places in which to hang their *gūliwill*, so as to expose them to prolonged heat.

The following account was given me of the effects produced by such a *gūliwill*, or the belief in it, which is much the same thing. "Sometimes a man dreams that some one has got some of his hair or a piece of his food, or of his 'possum rug, or indeed anything almost that he has used. If he dreams this several times he feels sure of it and calls his friends together, and tells them that he is dreaming too much about 'that man,' who must have something belonging to him. Sometimes the suspected *bangal* (wizard) being spoken to admits that he has something that he is burning, but excuses himself by saying that it was given him to burn, but that he did not know to whom it belonged. In such a case he would give the thing back, telling the sick man's friends to put it in water, so as to wash the fire out. In such cases the sick man would feel cooled, and most likely get well!"

There was the same belief in the tribes to the eastward of the Wimmera river: for instance, the Jupagalk; but the *bangal*, instead of using a *gūliwill*, tied the objects by a string to a yamstick stuck before a fire, and when the cord was burned and they fell the charm was complete.

The omental fat.—Of all the arts attributed to the wizards, that which was perhaps the most dreaded was the abstraction of a man's fat. This is usually spoken of by the whites as the taking of kidney-fat.¹ This belief is a very widespread one. It is not confined to those parts of south-eastern Australia to which these notes refer, but is found throughout the continent in so many places that I believe it to be universal. The Murring, Ngarego, Theddora (of Omeo), Wolgal and Wirajuri called this practice by some form of the word *būkin* or *būgin*. The Kurnai call it *brét-būng*, or "with the hand." The men who practised it were called *būra-būruk* or "flying," or also *brét-būng mūngar-wārūgi*, or "with the hand from a long distance." They were believed to throw their victim into a magical state by pointing at him with the *Yertūng*, which is a bone instrument made of the fibula of a kangaroo.

In the Kurnai tribe, men have died believing themselves to

¹ So far as I know, there is no "kidney fat" in man, as there is, for instance, in the sheep. The only fat near to the kidney seems to be in the folds of the peritoneum on which it rests, as on a cushion, or fatty substance, as the suprarenal capsules, which, however, are quite insignificant. The position in which the victim is, as it seems, laid on his back, and the situation of the incision in front and just below the ribs, clearly indicate the omentum as the source of the fat taken.

have been deprived of their fat, there being no signs of violence whatever on their bodies. At the same time there is no doubt that the fat-taking was actually practised. An informant, on whom I can fully rely,¹ tells me that when a boy he saw two old men secretly roasting and eating fat taken from a dead blackfellow, and they observed to him that now they would have the strength of the other man.

The effect of dreams, wherein the sleeper believed that he had fallen into the hands of such wizards may be imagined, and it is indicated by my Woiworung informant, who, speaking to me on this subject said, "Sometimes men only know about having their fat taken out by remembering something of it as in a dream."

I have said that the Murring called the fat-takers *bukin*. The belief extended with the same name in dialectic forms across the Maneroo tableland to Omeo and down the Murray and Murrumbidgee waters. The Wirajuri greatly dread the *būgin* and their practices, and attribute to them all kinds of supernatural powers. They are generally believed to be the wizards of neighbouring tribes. They are supposed to carry an instrument made of the pointed leg-bone (*fibula*) of a kangaroo, having attached to it a long cord of twisted sinews, ending in a loop. Watching until the victim sleeps, the wizard is supposed to creep to him, pass the bone under his knees, round his neck, through the looped end of the cord, and thus having secured his victim, to carry him away to extract his fat. How this is done will be seen by the account given to me by a Jupagalk man.

The *būgin* is believed to walk invisible, to turn himself at will into an animal, as for instance a kangaroo. My Wirajuri informant, in speaking to me of the *būgin*, of whom he expressed great dread, said as follows, "If I saw an old man kangaroo come up hopping close and sit and stare at me, I should keep my eyes fixed upon him, and try to get out of his way, lest he might be a *būgin*, who, getting behind me, would take me at a disadvantage."

Moreover, the *būgin*, when hardly pressed, is believed to be able to turn himself into a stump or a log, or even to go down into the ground out of sight—and thus escape his pursuers. A very dangerous practice attributed to the *būgin* is to get inside of a tree, and then, when a blackfellow is climbing it, to cause a limb, of which he has laid hold, to break off suddenly, so that he falls to the ground, and becomes an easy victim.

When the Wirajuri feels his flesh twitch he knows that a *būgin* is near; and thus is of the opinion of the second witch in

¹ Mr. James McAlpine, of Tarraville.

"Macbeth," who says, "by the pricking of my thumbs, something wicked this way comes."

Crossing from the Lower Murrumbidgee and the Murray rivers to the Wimmera, about Lake Hindmarsh we find the same belief in full force. Here is the account of the fat-taking powers of the Wotjobaluk wizards as given to me by one of the old men of the tribe.

The favourite plan is the usual practice of sneaking upon the victim when asleep. Or the *bangal* (wizard), if he is acquainted with his intended victim, manages to arrive at his camp so late as to be asked to remain all night. Pretending himself to sleep, he watches until his host is in sound slumber, when he passes his fatal "*yūlo*"¹ under his knees, round his neck, and through the loop, and so carries him a little way from the camp.

The old man also gave me an account of the manner in which the fat was always taken, whether the victim were noosed by the *yūlo*, or knocked down by a blow of the *brépent*² on the back of the neck. The victim was laid upon his back, and the wizard, sitting astride of his chest, cut him open on the right side, below the ribs, and thence extracted the fat.³ Then bringing the edges of the cut together, and singing his spell, he bit them to make them join, so that no scar should be visible. Then he retired to a distance, leaving the man lying on his back. He sings a song, which causes the victim to rouse up, and stagger about, wondering how he came to be "sleeping out there." This proceeding is called *déking-ngálūk*, or "open-side."

If the victim were a stranger, the wizard would not take so much trouble, but would leave him lying. If he be some one he knows, he does as above related, and moreover he is careful, when laying him out preparatory to operating upon him, to place him in that direction in which the dead of his *totem* are buried.⁴

The Mükjaraweint, a tribe which adjoined the Wotjobaluk to the south, had a similar belief as to the fat-taking wizards. The account given to me of their proceedings was almost identical with that just noted, the only difference being, that unless the *bangal* takes precautions, the victim will follow him when he recovers his senses. He therefore hides until he sees him rise

¹ *Yūlo* = bone.

² *Brépent* is a club with a knot at one end.

³ The position in which the victim is here laid shows, as previously stated, that it is the omental fat which is taken.

⁴ The Wotjobaluk have six principal *totems* arranged under two principal classes, Krokitch and Gamutch. Each *totem* has a particular direction in which its members are buried. For instance, *Wártwūt* (hotwind) with the head a little to the west of north, that is, in the direction from which the hot wind blows in their country. *Gnái-ngagūli* (belonging to the sun) to the east, that is, towards the sunrise; and so on with the others all round the compass.

and stagger towards him, when he turns him away homewards by throwing some earth at him.

The time which will elapse before the victim dies is fixed by the wizard walking along the nearest fallen tree trunk. Its length in strides fixes the number of days he has to live. The victim going home feels ill, does not know what is the matter with him, but by-and-by, just before he dies, he dreams of the man, or of the men, if there were more than one, who have taken his fat, and so is able to tell his friends, who make up a party to revenge him.

This belief in a sort of clairvoyance just before death seems to be very general among the aborigines. I have found it in the Wirajuri, where a man, just before his death, said to his friends who were standing round him, "Go on one side, so that I may be able to see who it is that has caught me."

It occurs in Gippsland also. A few years ago one of the Kurnai died from the effects partly of drinking and partly of exposure. When so near death that he was lying speechless in his camp, his great friend Tankowilin, whom I have before mentioned, besought him earnestly to tell him who it was that had caused his death, and was inconsolable because the sick man died without being able to tell him.

The belief in the abstraction of fat by wizards, and its magical powers, was also held by the Jupagalk. An account has been given me by a very intelligent man of this tribe of what he saw as a boy. His account is as follows :—

"When I was a boy about ten years old I went out one day with some of the men to hunt. We were all walking in a line, when one of them hit the man in front of him on the back of the neck with his club and knocked him down. Two or three of the men held me tight, so that I could not run away, for I was very frightened. Then the man cut open the one he had knocked down, by a little hole in his side below the ribs, and took out his fat. After that he bit the two edges of the cut together and sang a song to make them join, but he could not succeed. He then said that he could not do this because someone had already taken this man's fat before, as he could see by the marks upon his liver, and that whenever a man had been opened and closed up no one could do it again. As they could not wake the man up they buried him. They smoked the fat over a fire, and took it away tightly wrapped up in a cloth. They wanted it to carry with them to make them lucky in hunting."

The Yulo.—The bone instrument, which I have several times mentioned, was also used in all the tribes for other magical purposes, as, for instance, injuring people by pointing it at them

from a distance, when, as in the case of the quartz crystal, it was supposed to enter them and produce death.

The Wotjobaluk called it, when used in this way, *yūlo-witchinwelli*,¹ or "the flying yūlo," because it was not only pointed, but also magically thrown at a person. The wizard having sneaked to such a distance that he could see his victim's camp fire, and thus distinguish him by its light, was supposed to swing the *yūlo* round his head and launch it at him. The *yūlo* was believed to dart into the victim invisibly, and then compel him to come out to the wizard, who, throwing him over his shoulder, carried him off.

A Jupagalk man explained the way in which this kind of *yūlo* was made magically powerful. In his tribe it was called *yūlo*, and the practice was called *wonjerūp*, or "pointing." The *yūlo*, or bone, was the fibula of a kangaroo, pointed at one end, and having at the other the sinews still attached, out of which—and strips of human skin taken from a corpse—a cord was twisted. The instrument, when completed, was about twelve inches in length, and the cord thirty-six inches. To render it deadly, it was smeared with the fat of the corpse from which the skin was taken, and with the juices dropping from the stage upon which the corpse was laid to dry.² The instrument was rubbed with ruddle.

As in the Wotjoballuk belief, here also the wizard was thought to swing the *yūlo-jinert*³ round his head, and then launch it at his victim. People who fell ill were often asked by their friends, "Have you not dreamed of the man who has pointed the bone at you?"

The belief that a victim could be caused to leave his camp by means of the "flying yūlo" is paralleled by the belief of the Kurnai that men called *bunjil barn* could cause their victims to walk to them by reason of their enchantments. I have described these at length elsewhere,⁴ and need only add here that the pieces of wood from which they received their name were in shape like the *gūliwil* of the Wotjobaluk, and, like them, made of the Casuarina. Their magic fire round which they danced, singing the name of their intended victim, is exactly the magic fire (*tālmārū*) of the Murring initiation ceremonies, and the *bunjil barn* being rubbed over with charcoal, followed the custom of the initiation.

The Lesser Magic Familiars.—The doctors or wizards, of whose

¹ *Yūlo* = bone, *witchin* = feather.

² The first witch in "Macbeth" also believed in the magical power of "grease that sweeten from the murderer's gibbet."

³ *Jinert* = sinew.

⁴ Kamilaroi and Kurnai, p. 252.

practices against mankind I have now given some account, were the greater practitioners of magic, but there were also men who practised the lesser magic. These are credited with magical powers less in degree and usually different in kind from those of the doctors and wizards whom I have described.

I take an instance from the Kurnai. One of the Brataua clan dreamed several times that he had become a lace lizard,¹ and as such had assisted at a "corroboree" of those reptiles. Thus as it was believed, he acquired power over them, and he had actually a tame lace lizard in his camp, while his wife and children lived apart in a camp close by. The lizard accompanied him wherever he went, sitting on his shoulders, or partly on his head, and people believed that it informed him of danger, assisted him in tracking his enemies or young couples who had eloped, and, in fact, was his friend and protector. As might have been expected, people also believed that he could send his familiar lizard at night to injure people in their camps while they slept. In consequence of this comradeship with lace lizards, and probably because he was in some manner one of them, he received the name of Bunjil Bataluk.

I remember, many years ago, before I took any critical notice of these aboriginal beliefs, that there was an old Bidweli woman who was much feared because she had a tame native cat which she carried about with her, and which was believed to injure people during sleep at her wish.

Rainmakers.—Rainmakers and weather-changers must not be forgotten in an account of the lesser magic of these tribes. In Gippsland the rainmakers were not usually benevolent individuals who called up refreshing rains after periods of drought as did their analogues in the dry northern districts, but malicious persons who raised storms of wind and rain and floods which did injury and prevented the Kurnai from following their daily vocations in hunting and fishing.

These rainmakers were called *Bunjil-Willäng*,² and it is said of them as of the other Kurnai wizards, that they obtained their powers during dreams. I have before spoken of one of the Braiaka headmen who was credited with the power of calling up the furious west wind, whence he derived his name Bunjil-Kraura.³ He, as all others of these men, used songs,

¹ *Hydrosaurus varius*, commonly called the Iguana, called by the Kurnai *bataluk*. Mr. McAlpine remembers the man here spoken of well. He describes him as a very reserved, quiet-tempered man, who kept very much to himself. He had a great reputation for magical powers, and was the father of the Tankli spoken of in this paper.

² *Willäng* = rain. The Kurnai say that the frogs, when croaking in chorus in the swamps, are "singing for the rain," and that the big sonorous bull-frogs are the *Bunjil Willäng*.

³ *Kamilaroi and Kurnai*, p. 211.

which were often accompanied by some expressive pantomime. One of the well-remembered *Bunjil-Willäng* of the Brataua clan used to call up storms of wind and rain by filling his mouth with water and squirting it out towards the west, from which quarter the storms came in Western Gippsland. This he did to aid the charm which he sang. Even women acquired these powers, and there is now an old dame who has a great reputation for calming the storms by her songs, which speak of the furious winds blowing the leaves off the trees.

Each Kurnai clan had a direction from which its *Bunjil-Willäng* called up rains. The Brataua and Braiaka sang towards the west or south-west, the Tatung to the south, and the Brabra and the Krauatun to the south-east. The fact is that from these quarters come the prevalent rains which fall on the country of the clans named. Thus, when a westerly rain fell over the Brabra country, it was said that the Braiaka *Bunjil-Willäng* had sent it, and so on with the others.

It was also thought that the *Bunjil-Willäng* could bring or send thunder. Morgan, the headman of the Brataua clan, was a *Bunjil-Willäng* as well as in other respects a powerful wizard, and could, they thought, bring thunder at will.

By reason of this power, and on account of his deep growling voice, he received also the name of Bunjil-Gwórun.¹

Another instance of the beliefs as to rainmakers will suffice. Among the Wotjobaluk these men were not necessarily *bangkal*; in fact, as I learn, few of them were. The offices were distinct. In order to produce rain he took a bunch of his own hair which he carried about with him for the purpose. Soaking it in water he sucked the moisture out and then squirted it to the westward. Or he twirled the ball round his head so that the water flowed out like rain. In this arid district the office of rainmaker was much thought of.

The *Yenjin*, one of the most curious practices of the lesser magic I have found in the Kurnai tribe, seems so far as I yet know to have been peculiar to them. The men who practised it were called *Bunjil-Yenjin*.² The *Yenjin* is a song peculiar to elopement, as the *Günjeru* is a song which accompanied dances.

¹ *Gwórun* = thunder. The Kurnai had a curious belief about thunder. The Spiny Ant-eater (*Echidna hystrix*) is said by them to be the *Gueabün* (wife's mother) of the thunder, and that in consequence whenever it hears the voice of the thunder (its daughter's husband) it endeavours to hide itself by burrowing in the ground. It is also interesting to note, as showing how beliefs in tribes far apart are connected, that the Woiworing, who believed that thunder was something which came from the *Tharangalk*, the country beyond the sky, for the purpose of smashing up trees, also thought that the *Echidna* had command over it, for they have a legend of how Bunjil ordered it to smash up a rock with its thunder within which a stolen child had been hidden.

² In the Nülit dialect this was softened to *Yenín*.

There are now no *Bunjil-Yenjin* among the Kurnai, and probably the office has been vacant for over twenty years. Before that time there was at least one in each division of the tribe. Some men were more celebrated than others, and of them Morgan whom I have just mentioned had a great name.¹

The following account is derived from the statements of the Kurnai and partly also from those of two old residents of Gippsland, who in the early days were, as boys, much with the blacks in their camps, and thus observed and now remember many practices which are now obsolete.²

It seems from these statements that almost the last time when the *Bunjil-Yenjin* exercised their office on a large scale was at the holding of a *Jeraeil*,³ on the south side of Lake Wellington, about 20 to 25 years ago. At it ten or a dozen young couples "ran off" under the influence of love and the songs of the *bunjil-yenjin*. Some few of the people who were there are still living, and from them, and especially from one woman who was a girl at that time and who then "ran off" with her future husband, I have received very full accounts of what was done.

The substance of these statements is as follows. It was the business of a *bunjil-yenjin* to aid the elopement of young couples. For instance, when a young man wanted a wife and had fixed his mind upon some girl whom he could not obtain from her parents, he must either go without her, persuade her to run off, or call in the aid of the *bunjil-yenjin*. In this latter case he retained him by presents of weapons, rugs, &c. The *bunjil-yenjin* then lay down in or near the encampment, next to him was the young man, beyond him his comrades. The *bunjil-yenjin* then sang his song and the others all joined in with him.⁴ The following is one of the songs, of which there are very many, used on such occasions, and it is said to have been a most powerful one. My Kurnai informant, whose wife had been one of the girls who eloped at the *Jeraeil* I have mentioned, said, in speaking of it, "That *yenjin* made the women run in all directions when they heard it."

Bára-bärni.

Roll up the twine.

*Wángür.*⁵

jaw.

molla.

down there.

¹ Mr. McAlpine remembers that Morgan was one of the great singers of the tribe.

² Mr. J. McAlpine, of Tarraville, and Mr. W. Lucas, of Woodside.

³ Initiation ceremony.

⁴ Mr. McAlpine remembers, as a boy, hearing these songs on several occasions, and seeing girls going about the camp covering their ears with their hands. In answer to his inquiries these damsels said that the young men wanted them to run off, but that they did not want to do so.

⁵ *Wángür*=the Jaw, the girl's name. The name of course varies in each application of the charm.

tállo-burni.
little twine.

ngella gálí.
I go first.
góla.
before.

tallo.
little.

káragan.
sweetheart.
karnang.
the hollow (to).
yinna.
you.

This performance—ceremony it might even be called—was well known to all in the camp, for there was no concealment, and if done at any little distance there was always some female friend of the girl—some “sister, or a cousin, or an aunt”—to carry her the news and say, “So-and-so is singing a *yenjin* about you.”

When the *bunjil-yenjin* thought his spell strong enough, he ceased his song. In one case, where Mr. Lucas was present, Morgan was the *bunjil-yenjin*, and the girl's parents covered themselves up with their rugs as if asleep.

Before, however, the youth could avail himself of the spell thus cast upon his “little sweetheart” something more had to be done, and probably in the case mentioned by Mr. Lucas it preceded the covering up of the parents. Another wizard had to use his art to send them asleep. In the case of the *Jeracil* which I have mentioned, this man was the renowned *Bunjil Dáuangün*,¹ and his proceeding was as follows:—Being paid by the youth with weapons and 'possum rugs, he stuck his magical throwing stick in the ground, slanting towards the camp of the parents, and with such an inclination that after a time it would fall down. By its side he placed his *bulk*,² and at a little distance his *yertüng*,³ and beside it his *gūmbart*.⁴ He then sang his song, and when the throwing stick fell the charm was complete, and the parents supposed to be wrapped in a magical sleep.

The youth might now run off with his sweetheart, but only after a formality which shows that the final choice rested with her. Stealing round to the back of her parents' camp, in which she was sitting, he touched her with a long stick, and she being ready to run off, pulled the end as a signal. The young man then left, and the girl having packed up her bag (*batüng*)—in fact, having her trousseau ready—fitted after him.

In this case which I am now describing the proceedings were not yet over. After a time, according to my informant, the old people woke up, and finding their daughter gone, the old man

¹ Kamilaroi and Kurnai, p. 211.

² Kamilaroi and Kurnai, p. 251.

³ A small instrument made of Kangaroo bone, in some respects the analogue of the *yúlo*.

⁴ The bone nose peg.

summoned his kindred¹ to assist him in singing a song which was believed would cause the youth's legs to become so weary that he would not be able to make his escape. Finally, the father took his *māriwūn* (throwing stick), and, holding it loosely in his right hand, made blows with it towards different points of the horizon. When it gave a sound like a crack it indicated the direction in which search after the runaways was to be made.

Mr. Lucas tells me that he remembers being present when a couple, who had run off by means of a *bunjil-yenjin*, voluntarily returned after a time. One of the old women went out of the camp and brought them in. Mr. Lucas is not aware what was done to them, excepting that the young man had afterwards to stand out and submit to an ordeal of weapons of some kind.²

III.

The Wizard as a Healer.

I have now spoken at some length of the manner in which the blackfellow doctors have been accustomed, according to the belief of the aborigines, to work ill upon them. It remains to show these men in a somewhat more favourable light, as alleviating suffering and shielding their friends from the machinations of enemies or revenging those who had fallen victims to other wizards.

One of the special functions of the blackfellow doctors is to counteract the effect of spells wrought by others of their own class.

Their method of procedure is so common among savage tribes, and has so often been described that it may be dismissed with a few words. The cure is effected by sucking the affected part

¹ Descent with the Kurnai is in the male line. There are certain animal names, Sea Salmon, Wambat, which go from father to children, and probably represent former *totems*.

² Many other particulars might be added, bearing upon the subject of marriage by elopement as practised by the Brataua Kurnai, and as witnessed by Mr. McAlpine in the early years of settlement in Gippsland. But these statements would be foreign to the purpose of this paper. Those which I have given are connected with the Lesser Magic, and they fully confirm all I have elsewhere said as to elopement having been one of the recognised forms of marriage with the Kurnai. The old people in the case of the *yenjin* winked at the elopement, and yet punished the principal actors in it when they returned. I am now satisfied that the explanation of this extraordinary state of affairs is to be sought for in the restriction upon marriage which was produced by the combined action of the widespread archaic system of Kurnai kinships and the prohibition of marriage within the local groups.

The prohibition arising thus from the prohibited degrees, and from locality, rendered it next to impossible for a man to find any woman who was not in some way related to him in such a manner as to become forbidden to him as a wife. Consent of parents and relatives could only be obtained in the rarest cases, hence recourse was had to the only possible alternative, namely elopement, and the office of the *bunjil-yenjin* arose in time to lend a sanction to the proceedings.

and exhibiting, as having been extracted therefrom, some foreign body which had caused the ill; or by sucking the place and expelling the evil influence as a mouthful of wind; or by various manipulations, pinchings, squeezings, to allay the pain. In some cases the "poison" as they call it now, is supposed to be extracted through a string, or a stick from the patient to the doctor, who spits it out in the form of blood.

Charms are also sung to cure people. A very good instance occurred at the Jeraeil which I attended in February, 1884. One evening I heard a most extraordinary song proceeding from the camp of the second headman, Tulaba. I found him driving away pains which were troubling his old wife. He told me that he was singing a very powerful song which his father had lately taught him while he slept. The words are as follows, with a most extraordinary emphasis, when sung, upon the last word.

<i>Mínyan</i>	<i>būlūnma</i>	<i>náranke</i>
Show	belly	moon to.

As an illustration of the methods generally used, I can give the case of the Kurnai, Tankli, the son of the lace lizard man. His method of cure was to stroke the affected part with his hands until, as he said, he could "feel the thing under the skin." Then covering the place with a piece of cloth, he drew it together with one hand, and unfolding it, exhibited within its folds a piece of quartz, bone, bark, charcoal, even in one case a glass marble, as the cause of the disease. The use of the cloth is evident to any one but a blackfellow.

The curative powers of the wizards were, however, in many cases of a much higher order. The following account was given of a celebrated wizard of the Jupagalk by one of the men who was present, and I subjoin it as nearly in his own words as possible.

"A blackfellow was very bad, and about dusk King Barney came to see him. At dark he went off for a time. By and by we saw a light afar off, and as it seemed above the tree tops, it looked first like a star in the east. Then it went round to the west and kept coming nearer and nearer. At last we saw the *bangal* walking along the ground carrying a piece of burning rag in his hand. His legs were covered with something like feathers which could be seen by the fire-light, and the people said it was the 'bangal's feathers.' He sate down by the poor fellow, saying he had been over to the Avoca River, where he found a man who had the rag tied on a yamstick roasting it before the fire. He then rubbed the place where the man was sick and sucked out of it some pieces of stone and glass. The man then soon got better."

In this tribe when a man died it was the office of the *banggal* to go out with the relatives and watch at the grave, for it was believed that during the night the spirit of the wizard who had killed him would come and peep at the grave out of the bushes. He having thus been seen by the *banggal*, the relatives of the deceased were in a position to have revenge.

The Woiworung Wirarap.

In the Woiworung tribe the wizards (*wirarap*) besides making use of the ordinary curative processes which I have mentioned, practised also their art in extracting quartz crystals which were believed to have been projected by other wizards or doctors or by the supernatural being called *Ngarang*. The quartz crystal was believed to be projected in the form of a small dust whirlwind against the victim. In describing this, my informant Barak said as follows: "The man being struck felt cold, suffered pains all over him, then shortness of breath. Some *wirarap* seeing him might say 'Hallo! there is a lot of *mūng* (magic) in you.' The cure was for several *wirarap* to watch the man until they saw the *mūng* escaping like a little dust whirlwind from him.¹ It was then going back to its owner, and the *wirarap* would run after it and the one that caught it would break a little bit off so that it could not leave him any more. Then he would put it in his bag with his other things."

When a person believed himself to be under some spell by a person who had got something belonging to him, his resource was to the *wirarap*. That which was thus acted upon was called *yarūk*. He might suspect that some harm was impending over him by having a dream, for instance, of a kangaroo hopping towards him, and if he then became ill he would consult the wizard. My informant gave me this as an illustration:—"The *Wirarap* looking at him might say, 'Yes! the fire is up so high (pointing to his waist). It is well you came to me in time, for the next time they burned that thing belonging to you it would be up so high (pointing to his neck) and then you would be done for.' The wizard was then supposed to go to the place where the culprit lived, the next time the wind blew from it. He would go through the air to the place where the *yarūk* was concealed, pull up the throwing stick with it attached and bring it back. Giving the *yarūk* to the sick man, he would say to him something like this, 'You go and put this in a running stream to wash all the *mūng* out of it, and I will go up aloft and put this throwing-stick in some water up there.'"

¹ *Brewin* of the Kurnai is supposed to travel in such little whirlwinds. I have heard the Kurnai say, when seeing such a little spiral of dust and leaves in the forest, "Get out of the way, there is *Brewin* coming."

The functions of the wirarap related also to the cause of death in so far that it was his office to inform the relatives of the deceased who had been the aggressor. In order to do this he watched by the grave in order to see the spirit or "wraith" of a culprit sneaking round to see where his victim had been buried. When no wizard was available, the relatives in digging the grave, sought for some worm-hole, or grub-hole in it, and having found one poked a small stick or straw down it and by the inclination learned the direction in which to seek the culprit.

The power of the wirarap extended not only to the cure of afflicted persons and to the discovery of the person who had caused death by magic, but also, in some instances, at least to the bringing back of the departed spirit. Such a man is said to have been the Wirarap Doro-bauk,¹ who lived near Mt. Macedon. The following account was given me by a Woiworung man who was present.

"Soon after the white men came to Melbourne, a blackfellow, near where Heidelberg now is, was very nearly dead. His friends sent for Doro-bauk, who, on his arrival found the man only just breathing the least possible, and his *mūrūp* (ghost-spirit) had gone away from him. Nothing remained but a little wind. Doro-bauk went after the *mūrūp*, and by-and-by returned with it under his opossum rug. He said he had been just in time to catch it round the middle before it got near to the *karalk*.² The dead man was still breathing a little wind when Doro-bauk laid himself down upon him and put the *mūrūp* back into him. After a time the man came back to life."

The wirarap also in this tribe exercised supervision over the youth who had been made *jibauk* (initiated). He could dream of their actions. But the novice was also under supernatural penalties if he broke the food laws or rules of conduct laid upon him. Thus the Kulin of the Goulburn River, who were the neighbours of the Woiworung, and nearly allied to them, believed that if the novice ate the spiny ant-eater or the black duck, he would be killed by the thunder.³ If he ate of the female of the opossum or native bear, he was liable to fall when climbing

¹ Doro = a grub. Bauk = high up.

² *Karalk* is the bright colour of sunset, and is said to be caused by the spirits of the dead going into and out of Ngámat. Ngámat is the receptacle of the sun beyond the western edge of the earth. It seems that the dead do not remain permanently in Ngámat, for they are spoken of as returning, and are then spoken of as Ngamajet. The white men were also called Ngamajet. The Kulin of the Western Port District, neighbours of the Woiworung, used the word *Taringūra* as the equivalent of *Karalk*. This is explained to me as being also the word applied to a place on fire, as for instance an incandescent hole in the ground, out of which a tree stump has been burned, such as may be seen after any bushfire.

³ See footnote, p. 35.

trees, and so on for other similar offences. If the novice fell ill, and his conscience pricked him, his only chance of safety would be to present himself to the wizard or doctor.¹ My informant said that something as follows would occur: "The wirarap looking steadily at the boy, would say, 'There is a lot of *mūng* (magic) in you!' After a pause he would commence to rub the youth's leg, and after a little more time produce a small young 'possum and say, 'This has happened to you because you have been eating 'possum too soon.'"

Precisely similar supervision is exercised by the wizards of the other tribes after initiation over the novices.

I have before mentioned that the Woiworung believed that men could be injured by an evil being called *Ngarang*, which is in this analogous to *Brewin* of the Kurnai; but the latter lived in the sky, while the former was thought to live in the mounds of earth which are so often to be seen around the swollen stems of great forest trees. The *Ngarang* was described as being like a man with a big beard and hairy arms and hands. They came out at night in order to cast things at men passing incautiously. Their magic acted by making the victim lame. The wirarap was, however, superior, for he could extract these substances by his art, as quartz, bone, wood, or other rubbish. Of course, the *Ngarang* was invisible to all but the wirarap.

The Murring Gommeras.

Among the Murring of the coast, the wizards (*gommera*) were the principal men, and in this the Murring differed somewhat from the Kurnai and the Woiworung, and probably from other tribes among those I have mentioned.

I have before said that the Kurnai headmen were not necessarily doctors or wizards. For instance, the principal man of the northern section of the Kurnai, when Gippsland was settled by the whites, was one Bruthen Munji,² who was a fighting man and orator. It is said of him as showing his eminence as a warrior, that he had been known to run down a straggling Brajerak blackfellow, and hold him until his brother Bembinkel came up and knocked him on the head. With the Woiworung, according to my informant, Barak, the headmen were those old

¹ Mr. McAlpine, whom I have already mentioned, tells me that about 1856-57 he had a black boy in his employment. The lad was strong and healthy, until one day, when Mr. McAlpine found that he was ill. He explained that he had been doing what he ought not to have done, that he had "stolen some female opossum" before he was permitted to eat it; that the old men had found it out, and that he should never grow up to be a man. In fact, he lay down under the belief, so to say, and never got up again, and died within three weeks.

² Kamilaroi and Kurnai, p. 212.

men who "spoke straight and did not injure people."¹ The wirarap might be a headman, but was not necessarily such. With the Murring, on the contrary, the headman must also be a wizard. This comes out clearly in considering what the gommeras and their powers were.

The power of a gommera was very great before the disorganization of the Murring tribes, although even now he directs and is obeyed. He was the headman and wizard combined. He was the *biamban*, or master, of all the people of the local group to which he belonged.² The oldest gommera was the *biamban* of the other gommeras, who obeyed his directions. He directed the proceedings of the *Bunan* and the *Kuringal* (initiation ceremonies), and to judge from the one I have seen, maintained a certain reserve and kept himself somewhat apart as being superior. To be a "real gommera," a man must have certain qualifications. He must be grey-headed, must speak several dialects, or even languages, he must be skilful in arms, and above all he must be able to "bring things up out of himself."³ At the initiations, where the wizards exhibit their powers, sometimes singly, sometimes all together, the substances which they "bring up," and exhibit held between their teeth, are quartz crystals, or pieces of vein-quartz, pieces of blackstone, white substances (pipe clay, &c.), lengths of fresh intestine, pieces of flesh, bone, &c. The accounts given of the Gommeras of the past generation, say thirty years ago, if fairly trustworthy, show that they were more clever than the men now living. One man was described to me as having attended a great *Bunan*,⁴ coming from Braidwon, who protruded from his mouth, while performing his magical dance, a black substance about the size of a hand, which hung down from his mouth, and could be withdrawn and again protruded. It was believed that by exhibiting this to his enemies he could render their sight dim, and then go up and knock them on the head with ease. At the same *Bunan* it is said that another, during the dance at which the *totem* name, meaning "Brown Snake," is shouted, produced out of his mouth a small live brown snake, which his tribesmen believed

¹ Buckley says: "by my harmless and peaceable manner amongst them, I had acquired great influence in settling their disputes. Numbers of murderous fights I had prevented by my interference."—Morgan's "Life of Buckley," p. 101.

² In these tribes the local organization had superseded the social organization. The totems had lost their prominence and had sunk into "magical names" rather than names connected with descent.

³ This expression refers to the belief that the wizards keep their magical substances "in stock," so to say, within themselves, and can at will bring them up out of their interiors, so as to produce them from their mouths.

⁴ The *Bunan* is the complete ceremony of initiation, at which a circular mound of earth is made, within which some of the ceremonies take place.

to be what we may call his "familiar." A third gommera is said to have brought up a number of minute crystals of quartz, which, being dropped from his mouth into a wooden bowl, were given to the novices to swallow, in order that these crystals might "breed" inside them, and thus in time make them "clever men."

The gommeras were believed to go up aloft by threads, and this also applies to the wizards of the Maneroo Murring, the Ngarego, the Wolgal, and the Theddora of Omeo.

The ghosts were also, as elsewhere, in communication with the gommeras.

It seems to have been a favourite practice of the gommeras until quite recently to leave things lying about the *kuringal* (initiation) grounds. The general belief is that these are the substances which they can project into people, such as quartz, bone, &c. From one case which was related to me, it seems, however, most probable that they actually did leave sharp pieces of bone, which may have been poisoned. In the case I refer to, a young man walking across a *Bunan* ground, trod upon a sharp pointed piece of bone, became ill, and died. The symptoms described to me suggest blood poisoning. One then comes naturally to think of the statements which are made as to some of the South Australian tribes, namely, that the wizards used pointed bones, which had been left for a time in a putrid corpse, to kill people by scratching them.¹

The belief in the powers of these gommeras held by the tribes people, and even by the younger men who have been much with the whites, is well shown by the statement of one young man to me. He said, "These gommeras can put poison into you, and also suck it out. I have seen one of them suck it out in a good mouthful of blood from a man. They can also find out who it is that has put poison into a person." The word "poison" is very generally used by the aborigines as we should use the word "magic" or "magical substance." Perhaps the best equivalent is the North American term "medicine."

The Kurnai Biraark.

A peculiar feature in the Kurnai magic is the separation of the functions of the seer and bard from those of the doctor and wizard as herein described. The Kurnai *biraark* combined the seer, the spirit medium, and the bard, for he foretold future events, he brought the ghosts to the camps of his people at night, and he composed the songs and dances which enlivened their

¹ "Native Tribes of South Australia," Adelaide, 1879. "The Narrinyeri," by the Rev. George Taplin. Sec. iii. p. 29. *Neitgeri*, or the poison revenge.

social meetings. He was a harmless being, who devoted himself to spiritual performances which resembled very strikingly those of civilised "mediums." I have already written about these men,¹ and a few words only now remain to be said of them.

One of the best remembered biraark was a man of the Brabra clan, named Mündauin. It is related of him that he became a biraark by having dreamed three times that he was a kangaroo, and as such participated in a "corroboree" of those animals. In consequence of this kindred he could not eat any part of a kangaroo on which there was blood. Nor could he even carry one home which had any blood on it. Others did this and gave him such pieces when cooked as he could eat. He said in reference to this that if he were to eat any kangaroo meat with blood on it, or touch the fresh blood of a kangaroo, the *mrarts* would no longer take him up aloft.

Mündauin said that after dreaming of the kangaroos he began to hear the ghosts drumming and singing up aloft, and that finally one night they came and carried him away. A man who was present in the camp on the occasion of one of his "manifestations," said as follows:—

"In the night his wife shouted out, 'He is gone up.' Then we heard whistling in the air, first on one side of us, then on the other, and afterwards sounds as of people jumping down on the ground. After a time all was quiet. In the morning he found Mündauin lying on the ground near the camp, where the *mrarts* had left him. He had a big log lying across his back. He seemed as if asleep, and when we woke him up and took the log off him, he began to sing about the *mrarts*, and all he had seen up above."

At another *séance* by Mündauin the ghosts said finally, speaking in hollow, muffled voices, which my informant imitated by holding his nose when speaking, "We must now go home, or the west wind may blow us out to sea." In the morning the biraark was found as before lying on the ground outside the camp, and round about him were the marks of feet deeply stamped into the soil, where the *mrarts* had alighted.

Besides learning news from the ghosts about absent friends, and possibly present enemies, the biraarks were also material benefactors to their tribesmen, as when the ghosts informed them of a whale stranded on the shore. For it was thought that the whales were in such cases intentionally killed by the *mrarts* and sent ashore for the Kurnai.

At such times messengers were sent out, and all the surrounding people from far inland collected to feast upon the "food sent by

¹ Kamilaroi and Kurnai, p. 253.

the gods." No doubt at such times the biraark was not forgotten.

Powers such as these of the biraark were also attributed to the wizards of the Wotjoballuk and the Wirajuri, who were believed to be able to bring down the ghosts to the camp at night, so that the people could see their dim figures walking about in the gloom.

Magical Omens.

I have now noted the principal beliefs which have come to my knowledge bearing upon the powers and the office of the wizards and the doctors. A few words may conclude this section as to the omens and warnings believed in, and which are in some measure connected with magic.

I have several times mentioned a common belief that kangaroos can give warning of coming danger. A Murring young man, who served me as a messenger, in connection with initiation affairs, had a bag of powerful charms (*joëa*), which had been given to him to take care of by a gommara, his relative, and by other gommaras. Among these was one which he prized very highly, and on inspection I found it to be the top of a cut-glass stopper of some bottle. The use of these magical objects to the young man was in the manner of protective charms. When I asked him how they would protect him, he said, "If I were going along, and saw an old man kangaroo hopping straight towards me and looking at me, I should know that he was giving me notice that enemies were about. I should get my spear ready, and I should hold my *joëa* bag in my hand, so that if the man were to chuck something at me I should be safe." The throwing of the *joëa* is, in other words, the projection by some wizard of a quartz crystal or other magical substance. In this case the young man has the kangaroo for his *totem* (from his father). I may note, that "getting his spear ready" is a mere figure of speech for being prepared, for the Murring have long laid aside their native weapon, the spear, for the white man's gun.

The Kurnai also believe in kangaroo warnings, and for one to dream of a number of "old men kangaroos" sitting round his camp, is to receive a serious warning of danger.

It was a practice with them to consult the crow in times of danger, by saying to it, "Which way shall I go?—north, south, east, west?" When the bird croaked "*Nga-a-a*" (yes) the oracle had spoken, and the omen was accepted. One of the nightjars has a note which the Kurnai say is "*borūn-borūn*," or "jag spear, jag spear," and indicates that enemies are about. The note of another bird—which I have now unfortunately forgotten—indicates the arrival shortly of some one.

A Kurnai hearing a cracking sound in the ground under his head when lying in his camp by fire at night, would consider that the ground was giving him warning against some danger near at hand.

In all tribes with which I am acquainted, the lives and actions of the people are much influenced by such omens as well as by dreams.

Doctors' Fees.

It goes without saying that the wizards and doctors in all these tribes did not exercise their powers gratis. Presents were given them by people who had benefited by their art, and also by people who feared lest they should suffer from it. They received presents of weapons, rugs, implements—in fact, of all those things which are of value to the aborigines, not forgetting a share of the game caught. Especially did they reap a harvest at the great gatherings. The *Bunan* gatherings of the Coast Murring may be taken as an example. Before the people separated to return home, a sort of fair or market was held, to which people brought the weapons, rugs, implements, &c., which they had brought with them for the purpose.¹ From these "fairs" the gommeras went away loaded with gifts.

IV.

How Men became Doctors or Wizards.

The subject of this section I have found to be one of almost insuperable difficulty. The blackfellow doctors surround themselves with profound mystery and of course give the account of themselves which best suits their purpose. The relation which these statements, as current in the tribe, bear to the truth, is no doubt the same as that of the proceedings at initiations given to the women and children in relation to the true proceedings. What these latter are the reader can learn by reference to my two communications to this Institute.² The statements made to the women are that *Daramulun* comes down in person and knocks the boy's tooth out (Murring, Ngarego, Theddora, Wolgal, Wirajuri), that *Turndun* comes down and makes the boys into men (Kurnai).

On the Lower Lachlan and the Murray the novice is said to meet *Thrumalun*, who kills him and brings him again to life.

In one part of Queensland the sound of the Bullroarer is said to be the noise made by the wizards in swallowing the boys and bringing them up again as young men. The Ualaroi of the

¹ This fair has fallen out of use at the present time.

² "On some Australian Ceremonies of Initiation" and "The Kurnai Jeracil."

Upper Darling River say that the boy meets a ghost which kills him and brings him to life again as a man.

So it is with the doctors and wizards. The tribes are full of tales of the manner in which these men acquire their terrible powers.

As I have said, I have found the elucidation of this subject most difficult, and I have not succeeded in working it out at all to my satisfaction. The wizards of "the olden time"—that is, of the time before the tribes became "tamed" by the whites—soon die out blighted by our civilisation, or they linger on and either shut themselves up within themselves or give themselves up to rum and its consequences.

The second generation of blackfellow doctors loses much of the old practice of magic, and by-and-by these die and the race becomes extinct, and only shows now and then in some old man who has partially retained some of the magical practices of the old time. Such has now become within the last few years the condition of the Kurnai, and it will be the same with every Australian tribe as the wave of civilisation rolls over and crushes it.

The Kurnai belief is that the doctors (*Mulla mullung*) obtained their powers in dreams. Either the ancestral ghosts visited the sleeper and communicated to him protective chants, or they took him in spirit with them and completed his education elsewhere. Tulaba is a case of the former,¹ and Tankli, the son of the Lace Lizard, is an instance of the latter, as I shall relate further on.

The wizard of the Kurnai appears in the form of the *biraark*, a harmless being who was the medium of communication between the ghosts and the tribe. It will be seen that the account given of himself by Tankli combines both the beliefs as to the manner in which men became doctors or spirit mediums.

The Wotjobaluk believed that a man became a *bangal* (wizard) by meeting with a supernatural being, called by them *Ngatje*, who is said to live in the hollows in the ground in the Mallee Scrubs. They think that the Ngatje opens the man's side and inserts therein such things as quartz crystals, by which he obtains his powers. From that time he can "pull things out of himself and others," such as quartz, wood, charcoal, and also from his arms "something like feathers" which are considered to have healing properties.

The Woiworung also believed that their wiraraps were instructed by the ghosts who conveyed them to the sky through a hole to *Bunjil*, from whom they received their magical powers.

The Murring of the coast considered that it was Daramulun who gave their powers to the gommeras, but at the same time

¹ See p. 39.

thought that a boy could be trained up "in the way he should go"—that is, in magical ways. A great gommara, called by the whites Waddiman, that is to say, "Tree climber," who died only a few years ago, is reported to have said that he was trained up as a boy by a very great gommara of that time. As Waddiman died at a great age, his training took place probably some sixty years ago. He also said that he got his magical powers from Daramulun.¹

The Ngarego, Wolgal, and Theddora held the same belief as to Tharamulun being the source of the magical power of their wizard.

The Wirajuri wizards professed to go up to *Baiame* for their powers.² But the wizards also in this tribe trained up their sons to follow in their steps. The account which I subjoin was given to me by a Wirajuri of the kangaroo totem of the Muri sub-class, and is an excellent example of the beliefs held in such matters.

This narrative was given voluntarily during a conversation I had with him about the initiation ceremonies of his tribe. He had been careful not to betray anything unlawfully until he found out from my answers to him that I was indeed one of the initiated. He then became quite communicative and gave me a full account of the Wirajuri ceremonies (*bũrbũng*), and in many respects I was able to check his statements and found him to be quite accurate. He then, when we were talking about the magical exhibition of the wizards at the ceremonies, said, "I will tell you about how my old father began to make a black-fellow doctor of me." My impression is that his account was *bonâ fide*, and from my experience I should say that it would be an unheard-of thing for a man to falsify when speaking of matters relating to such sacred subjects as the initiation with an initiated person. I mention this because I have not been able to verify his statements. Up to the present time I have not succeeded in placing myself in communication with the old man, his father, who is believed to be still living on the Lower Murrumbidgee River. I now give his account in his own words as far as possible, and I leave it to my readers to form their own opinion as to its value:

"My father is Yibai—Iguana.³ When I was quite a small boy he took me from the camp into the bush to begin to train me

¹ As to Daramulun see "On some Australian Beliefs," and "On some Australian Ceremonies of Initiation," Journ. Anthropol. Inst., vol. xiii. p. 192, 432, &c.

² *Baiame* is the analogue of Daramulun or Bunjil, or Munganngaura, the supernatural being to whom the aborigines attribute the institution of their social organization, and the invention of their arts.

³ *Yibai* = *Ipai* of the Kamilaroi.

to be a *wulla mullung* (doctor or wizard). He placed two large quartz crystals against my breast, and they vanished into me I do not know how they went, but I felt them going through me like warmth. This was to make a clever man¹ of me and able to bring things up. He also gave me some things like quartz crystals, in water. They looked like ice, and the water tasted sweet. After that I used to see things that my mother could not see. When out with her I would say, 'Mother, what is that out there, like men walking?' She used to say, 'Child! there is nothing!' These were the *jir* (or ghosts) which I began to see.

"When I was taken to the Burbung² and had seen what all the old men could bring up out of themselves, and when my tooth was out I went into the bush for a time, and while there my old father came out to me. He said, 'Come here to me,' and he then showed me a quartz crystal in his hand, and when I looked at it he went down into the ground and came up all covered with red dust. It made me very frightened. He then said, 'Come with me to this place,' and I followed him into a hole leading to a grave where there were some dead men who rubbed me over to make me clever, and who gave me some quartz crystals. When we came out my father pointed to a tiger snake, saying, 'That is your Būdjan.'³ There was a string tied to the tail of the snake. It was one of those strings which the doctors bring up out of themselves curled up together. He took hold of this string, and said, 'Come, follow him.' The tiger-snake went through several tree trunks, which opened and let us through. Then he came to a great Currajong tree⁴ and went through it, and afterwards to an immense tree with a great mound round the roots.⁵ It is in such places that Daramulun lives.⁶ Here the tiger-snake went down into the ground, and we followed him and came up under the tree which was hollow. There I saw a number of little Daramuluns. After he came out again the tiger-snake took us to a great hole in the ground which was filled by a lot of tiger-snakes, which rubbed themselves against me, but did not hurt me, being my Būdjan. They did this to make me a clever man and a *wulla mullung*.

"My father then said we will go up to Baiame's camp. He got astride of a thread and put me on another, and we held by each other's arms. At the end of the two threads was Wombū the

¹ To be a "clever man" is the phrase used for being a wizard.

² Initiation ceremony.

³ Būdjan = totem. The tiger snake is his secret totem; his own by inheritance through his mother is kangaroo.

⁴ *Brachychiton populneum*.

⁵ See the Ngarang of the Woiworung.

⁶ The Wirajuri say the Daramulun is the son, or one of the sons, of Baiame.

bird of Baiame. We went through the clouds, and on the other side was the sky. We went through the place where the doctors go through, and it kept opening and shutting very quickly. My father said that if it touched a doctor as he was going through it would hurt his spirit, and when he returned home he would sicken and die.

"On the other side we saw Baiame sitting in his camp. He was a very great old man with a long beard. He sat with his legs under him and from his shoulders extended two great quartz crystals to the sky above him. There were also numbers of the boys of Baiame and of his people who are birds and beasts.

"After this, while I was in the bush, I began to bring up things, but I became very ill, and cannot do anything since."

There are some things to notice in connection with this man's statement which I shall defer until the concluding section of this paper.

The account which was given me by Tankli of the manner in which he became a *wulla mullung* is as follows. I have kept to his own language as nearly as possible :

"When I was a big boy, about getting whiskers, I had some dreams about my father. He came to me with a number of old men. I was at that time camped with my people at Tarraville,¹ and Morgan and other old men were there. When I first dreamed my father and the other men who were with him stood round me. They were all rubbed over with red ochre, and they made me hold a cord made of sinews, and they swung me about on it. After that when they came once or twice they were dressed as if for the *jeraell*.² My father put a cord of sinews round my waist and under my arms, and he and the old men carried me by it over the sea at Corner Inlet, and set me down at Wilson's Promontory in front of a big rock like the side of a house. I noticed that there was something like a door which opened and shut very quickly. My father tied something over my eyes and led me into the rock. I knew this because I heard the door make a sound of shutting to behind us. Then he uncovered my eyes and I found that I was in a place as bright as day, and all the old men were round about. My father showed me a lot of shining bright things on the wall and told me to take some. Then we went out again and he taught me how to make these things go into my legs, and how I could pull them out again. He also taught me how to throw them at people. After that he and the other old men carried me by the cord back to the camp and put me in the top of a big tree.

¹ In South Gippsland.

² Initiation ceremonies of the Kurnai.

He said, 'Shout out loud, and tell the people you are come back.' I did this and I heard the people in the camp waking up and the women begin to beat their rugs. Then old Morgan and the old men came out with firesticks, and when they reached the tree I was down and was standing by it on the ground, with the thing my father had given to me in my hand. It was like glass and we call it *kin* (quartz). I told the old men all about it, and they said I was a doctor. From that time I could pull things out of people, and I could throw the *kin* like light in the evening at people to hurt them. I have caught several in that way. About three years ago I took to drinking and I then lost my *kin* and all my power, and have never been able to do anything since. I used to keep it in a bag of ringtail 'possum skin in a hole in a tree. One night I dreamed that I was sleeping in my camp and that my wife threw some *krūk*¹ on me. After that I never could do anything, and my *kin* went out of the bag, I do not know where. I have slept under the tree where I left it, thinking that my power might come back, but I have never found the *kin*, nor can I dream any more of it."

V.

Conclusion.

The general belief of the aborigines as to the powers of the wizard are much the same in all the tribes herein spoken of. He is everywhere said to have received his dreaded powers from some supernatural source, from the ancestral ghosts, or from Daramulun, Baiame, or Bunjil. In all cases he is credited with the power of seeing man in an incorporeal state, either temporarily or permanently separated from the body, as a ghost which is invisible to other eyes.

He can, it is thought, ascend to ghost-land beyond the sky, or can transport himself or be transported by the ghosts from one spot of earth to another at will, much after the manner of the Buddhist Arhat. The powers thus conferred upon him he can use either to injure or destroy men, or to preserve them from the secret attacks of other wizards. He can also, it is thought, assume animal forms and control the elements. In these beliefs as to the powers of the blackfellow doctors, we find a striking resemblance to those which have been held concerning wizards, sorcerers, and witches in the past in those parts of the earth as to which we possess records, as well as to those beliefs common to savage peoples all over the world at present. Nor can it be said that they have altogether died out even in the most civilized races.

¹ *Menses.*

Some of the practices of the Australian wizards are not only found in all the tribes I have dealt with herein, but they extend throughout the Australian continent. For instance the use of the quartz crystal and of human fat. The use of the transparent crystals of quartz is also world-wide for magical purposes, and may perhaps have been handed down from the most distant times when our own ancestors were savage. It is difficult to say why it should have been so universally fixed upon as peculiarly fitted for the practice of magic; but it is open to conjecture that it may have been, as with the Australian savages, on account of its peculiarly clear and waterlike appearance, which had attracted attention and caused feelings of wonder.

The practice of fat-taking in the form in which the belief is found, seems also most difficult to explain and account for. After considering all the evidence before me, I have thought that it may perhaps have been the outcome of the combined effect of two beliefs, which are held by the blackfellows. One is as to the nature of dreams, and the other as to the position which fat holds in the human economy.

It has become pretty clear to me that many beliefs of the Australian savage have arisen out of attempts by his ancestors to account for phenomena which they have perceived both around and within themselves. I have been forcibly struck when travelling in the wide, open, and level stretches of the interior of the continent by the apparently self-evident view which the earth and the sky suggest of a flat surface and a vaulted covering. The Australian savage holds this to be the actual fact, and it cannot have seemed less patent or less reasonable to his ancestors. He attempts to account for the space between the earth and the sky by saying that at one time they touched each other, that is to say, the sky lay on the earth, and that the magpie,¹ who was at that time a man, pushed up the former with a stick so that the sun could commence his ceaseless course.² When the sun goes down at evening into the glow of sunset, he explains the phenomenon by saying that he has gone into a place resembling a glowing cavity, out of which a tree stump has been burned.³ It is by such explanations that he endeavours to account for natural phenomena which have excited his curiosity—a spirit of inquiry into the surroundings which is inherent in man, and not only in him but in a decreasing amount as we trace back the chain of animated nature.

How such views as the above have been so strongly held by

¹ In the Wotjobaluk language *Goräk*.

² The sun is a female, according to the Wotjobaluk, seeking daily for her little boy whom she had lost while digging for yams.

³ Woiwörung tribe.

our own ancestors, is well shown by the impress of primitive thought upon language which has compelled me, at the time unconsciously, to use words which in fact imply that the sun moves from east to west, and sinks beyond the western edge of the world :

“ Then we upon our globe’s last verge shall go
And view the ocean leaning on the sky.

When at night the blackfellow sleeps by his camp fire, and has dreams, he explains them by saying that while his body lies motionless, he himself is able to wander abroad, and to do or to suffer. He even attempts to fix the precise time by explaining another phenomenon by saying that the human spirit goes upon its nocturnal wanderings when the sleeper snores.¹ When waking he is conscious that he exists, together with his body, and he calls his self-consciousness by some name, such as the Kurnai word “Yambo.” During waking moments he and his body are inseparable, but during sleep he can leave it and wander abroad and then meet the spirits of other people, of those he knows, of strangers, and even of the dead.

Thus this view of the reality of dreams, enables the Australian savage to reach, by a natural stage of reasoning, a conception of the individual apart from the body, not only during life but also after death, as an immaterial, invisible being, for who can see the Yambo leaving the sleeper? Yet it is visible to other sleepers as the experience of every blackfellow will assure him.

No distinction separates this belief from another, namely that some persons are even so gifted as to be able to see the disembodied spirit sitting by the spot where its body lies buried, and no longer able to resume its accustomed habitation. These peculiarly gifted seers lead direct to the doctor and the wizard.

In dreams, the blackfellow visits the vaulted sky beyond which lies the mysterious home of that great and powerful Being, who is Bunjil, Baiame, or Daramulun in different tribal languages, but who in all is known by a name the equivalent of the only one used by the Kurnai, which is *Mungan ngaur*, or “Our Father.” In dreams he sees the dead peopling that land of trees and streams, and he naturally finds among them those old men who directed the tribe on earth, and who now only remain there in reverential memory.

It seems to me that this belief in the reality of dreams, as regards the human self-consciousness gives a key to many universal beliefs which otherwise seem almost inexplicable.

¹ Woiworung tribe. Mr. Fison tells me that this is also a South Sea belief, where a peculiar snore denotes this state.

The second belief to which I have referred as having probably reacted with the notion of the reality of dreams in producing the practice of Bukin is that as to the nature of human fat. I find a general belief that there is some connection between a man's fat and his strength and vitality. Health, strength and fatness seem to be directly connected, and, therefore, the wasting of the body and disease to be the result of the absence of fat, and perhaps followed by death. The belief that a man's vitality and his fat have some connection, is shown by the widespread practice of eating the fat of deceased persons and of enemies slain.¹ I have given an instance of such a practice among the Kurnai. By eating a man's fat, and thus making it part of himself, the blackfellow believes that also acquires the strength of the deceased. So it is also that the human fat brings in hunting, causes spears to fly true to their mark, or the club to strike irresistible blows.

It is a common belief that when two things are associated together any magical power possessed by one will be communicated to the other. For instance, when returning from the Murring Kuringal, I was the custodian of the teeth which had been extracted from the novices, and the old men earnestly besought me not to carry them in the bag in which they were aware I had some quartz crystals. They pointed out that if I did so, the magic of the quartz crystal would pass into the teeth, and injure the boys. I might continue with a number of such illustrations of the belief in the "spiritual" influence, if I may use such an expression of one substance through another upon a third.

The possession of human fat is, therefore, much desired by the aborigines, especially those who feel age or disease, and those who desire to be successful in magical arts.² The desire to obtain it leads to the killing of aliens, or even, in some cases, of people of the same tribe. The practice of taking fat is a real one, and as such would most certainly become part of the stock of dreams of the blackfellow, who believes that the wizards, especially those of inimical tribes, are always on the look out for chances to take fat, either by direct violence or invisibly by

¹ For instance see Gason's remarks as to the eating of human fat by the Dieyerie. "The Dieyerie Tribe" by Samuel Gason, Adelaide, 1874: also "Native Tribes of South Australia" Wigg, Adelaide, p. 274.

² The desire to use the influence of those portions of the human body in which the aborigines believe the vital strength to reside leads them to use, not only fat but also other sources of strength which it is hardly possible to explain in direct language. So far as I know at present, the practice I refer to occurs in a Cooper's Creek tribe and also as lately described to me by Mr. C. M. King, the Police Magistrate at Milparinka, in New South Wales, in the tribe at that place. All that I can now say is that it seems to be connected with the peculiar practice in some tribes of slitting the urethra.

means of some of their terrible secret arts. A blackfellow suffering from nightmare, dreams in accordance with his waking beliefs and experiences. An evil ghost has seized his foot and is about to drag him out of his camp, or the *Bret-bung* has caught him at last and is about to extract his fat (Kurnai). What can seem more horribly real than such subjective impressions. A white man who has had nightmare, and has dreamed that he has fallen helplessly into the hands of garotters can realise how irresistibly truthful analogous dreams must seem to the blackfellow and that sometimes he actually dies after a succession of such dreams, from what seems to be nervous collapse.

I think we may feel sure that the belief in the supernatural powers of the wizards rests in part upon the effect of dreams upon the aborigines, and partly upon the want of knowledge by them of the true nature of disease. They naturally attribute disease, which is not the normal state of the sound human body, to supernatural influences, in their attempts to find an explanation. A Kurnai suffering from bronchitis, and seeking for a cause, finds one in the semblance of his sensations to what he might expect to feel if his chest were stuffed up with the charred dust which falls from the "fire drill." He says, therefore, that Brewin or some blackfellow doctor has filled him with "Tündüng." A Wotjobaluk who suffers from some form of fever and who has delirious dreams, in which he sees the fantastic actions of people conjured up by his fevered brain, receives this as a clear proof that one of these people has burned something appertaining to him. These instances will suffice to illustrate my meaning, but they might be multiplied indefinitely.

The most difficult question which I have had to deal with in this inquiry has been to determine how far the doctors and wizards believe in their own powers. All explanations concerning them must be given by the tribes-people or by themselves, and if the latter one has to distinguish between those explanations which are truthful and those others which are not, and which have been made for the purpose of blinding the tribe. Herein lies the great difficulty. The class of blackfellow doctors is almost extinct in the tribes of which I have a personal knowledge, to which I have access and in which I am so well known, that the old men do not, when questioned, shut themselves up in a reserve which often successfully simulates dense stupidity. The "real old gommeras" of the Murring became extinct when Waddiman died a few years ago. The last biraark of the Kurnai was killed twenty-five or thirty years back. The Woiworung and Jupagalk wirap and bangal have been all

dead I do not know how long. There only remain, so far as I can learn, two old men, wizards of the olden time, within that part of Australia covered by the inquiries noted in this paper. One of them wanders somewhere between the Wimmera and the Murray rivers, the other on the Lower Murrumbidgee, the Yibai-Iguana, whom I have already mentioned in these pages. As yet I have failed to meet with them, and for all I know these two old men may even now have gone from the land of their ancestors to the "ghost-land" of Baiame.

The blackfellow doctors as a class naturally surround themselves with mystery. Their magical practices are not favoured by too open examination, and the more that is left to the active imaginations of their tribe, the better their assertions are received. But within the inner circle of initiated I have found so far that there is but a thin veil cast over the arts magic which are performed in public.

The doctors and wizards in these tribes are, with few exceptions, conscious pretenders and impostors. The very few who believe that they are able to effect cures by charms received in dreams are men like Tulaba. As for the others, I have a good example in two old Murring men, who came to see me some twelve years back, and who still have a great reputation as being very powerful wizards and doctors. To me these men do not profess to be able to do supernatural acts, but the tribesmen have ocular evidence, for they have seen them "bring up things out of themselves" at the Kuringal. As I have already stated one excused himself for no longer having that power by having "drunk too much grog" which had spoiled his *joëa* (magic); the other smiled and said that he had drunk too much tea. When these men came to see me they brought a number of the Murring. Being friendly with the Kurnai, they were also much with them. One of these being ill consulted one of the Murring doctors who, after manipulating him, sucked the afflicted place, and exhibited a quartz crystal as being the cause of the ill. He also told the patient that it had been thrown at him by the other Murring doctor. The man got well, and the reputation of the two old men was greater than ever. It was, however, a very dangerous game to play, as had the man died, the evidence would have been conclusive.

As to the two men, Tankli and Muri-Kangaroo, the case is somewhat different, and they represent a class which was larger in the tribes formerly. Granting all that can be said as to the intentional fraud of the blackfellow doctors, and admitting that many of them are mere cheats and frauds, there remain some who really have a belief in their own powers as well as in those of other men. I feel strongly assured that both the Kurnai and

Wirajuri men believe that the events which they related were real, and that they actually experienced them.

As to Tankli, it seems to be most probable that his case has been one of nervous exaltation combined with somnambulism and that upon the "subjective realities" in that state he has built up a structure of deceit in his practice of his curative art. That he believes also in the reality of his dream which he says caused him to lose his *kin* and his magical powers seems most probable, when one considers that he has voluntarily relinquished the practice of an art which brought him great consideration.

The case of Muri-Kangaroo seems to me to point to the practice of some form of hypnotism among the old class of wizards. The youth at the time of initiation is in a peculiar and abnormal mental state. He is fed full of magical ceremonies and beliefs. He has undergone fearful and impressive ceremonies, and is in a condition which would be peculiarly fitted for the practice of hypnotism.

One can understand that a youth who had passed through such an experience could never doubt the reality of the magic powers of others, even when himself conscious that he had no such powers.

The difficulty I see in this view, is, however, that so far as I know, persons who have been hypnotised, and thus brought under the influence of waking dreams, do not afterwards remain conscious of the subjective events of that state.

DISCUSSION.

Mr. LAWRENCE GOMME observed that although he had not expected, as a visitor, to be called upon to speak, yet he had noted one or two facts which the paper had brought out and which it was interesting to emphasize. In the first place it must be noted how the office of wizard or medicine man was distinctly an academic office, if such a term might be used of camp society. He meant by that expression that aspirants to the office had to undergo some preparation or special training and had to possess special faculties. This feature alone made a clear distinction between the superstitions of witchcraft and the generally current popular superstitions which did not depend upon specially appointed advocates. Mr. Gomme noted that the Australian blackfellow doctor was supposed to obtain his medicinal objects from his own stomach or inside, whereas if the researches of Dr. Callaway in Africa were consulted, it would be found that the Zulu wizard obtained his magic medicines from the ground and that great skill and training was supposed to be required to be able successfully to find these objects. On the whole Zulu witchcraft was a much more systematic cult than the Australian, and it was a question whether the Australian

really believed all he practised or had passed forward to the stage of unbelief. Mr. Gomme thought that he really believed in his own powers. Another feature prominently brought out by Mr. Howitt's paper, was the custom of repeating rhyming incantations. This was a subject that Mr. Gomme said he had paid considerable attention to and had made large collections of examples and it was curious how nearly everywhere much virtue was supposed to exist in the formulæ being in rhyme. Mr. Howitt's paper was particularly valuable because it was the personal observation of a traveller, and his notes would form a substantial addition to the already extensive literature of witchcraft.

Major E. CECIL JOHNSON, F.R.Hist.S., remarked that one of the most interesting points in the paper was the allusion to crystal as one of the substances supposed to be extracted by the "medicine men" or "wizards" from the bodies of their victims. Crystal had been associated from time immemorial in some mysterious way with the assumption of supernatural powers. We find it mentioned by medicinal writers in the black art as one important factor in the unholy rites of witchcraft. We find it credited with magical properties amongst the Jadoogars of India, we find it used by Cagliostro in recent times, and by modern mesmerists in electro-biological experiments.

Mr. RUDLER also made some remarks on the superstitions associated with rock crystal. Pieces of crystal are occasionally found in barrows, and seem to have been valued as amulets. He alluded also to the divining ball of Dr. Dee, which was a sphere of rock crystal now preserved in the Mineralogical gallery of the British Museum (Natural History).

The following paper was taken as read :—

NOTES on the NUMERAL SYSTEM of the YORUBA NATION.

By ADOLPHUS MANN, Esq.

OF late, the nations and languages of West Africa have largely occupied the attention of the learned linguists of Europe, and grammars and vocabularies are being published in considerable number. By means of the laborious work of Mr. Rob. N. Cust on "*The Modern Languages of Africa*," the classification of the four or five hundred languages has been advanced to such an extent as could not, some years ago, have been expected. Perhaps the following notes on the numeral system of the Yoruba nation may interest the student of ethnology and languages, and may be of some use in investigating the nature of the mind that can form such an unusual, yet regular structure. A superficial knowledge, with a slight attempt of praxis, suffices to understand peculiarities in the arrangement of these numerals, to which

analogies in other languages are but rarely found. We light, as it were, on a building, which, when viewed from base to summit is not behind our European systems in regularity and symmetry, while the system surpasses them in the aptitude of interlinking the separate members; it stands to them in the same relation as the profusely ornamented Moorish style stands to the more sober Byzantine.

The numerals of all nations are formed on the basis of the radical units, with one or two original terms, by the help of addition and multiplication we get all we want. One added to ten, and hundred and thousand properly joined together make up a complete system. Very different is the framework of the Yoruba, it can boast of a greater number of radical names of numerals, and to a large extent makes use of subtraction, which, in the Aryan languages we find employed only in the Latin *unde* and *duode viginti*, &c., &c., and which could not find a place in its Romance sister-tongues, whilst only a few Greek authors paraphrase subtraction with the verb *δέω*, *opus habeo*, *indigeo*; as *δυοῖν δέοντες πενήκοντα ἄνδρες* or *μᾶσδεύσαις εἰκοσί ναυσί.* Here subtraction is of a sporadic occurrence; in the Yoruba it enters so fully into the system as the third power with addition and multiplication to make up the file of numbers that we are tempted to ask, Where is division?

As it is not intended to write a paragraph of a grammar but rather an ethnological sketch, the language shall be introduced as little as possible, but it cannot be left out altogether; however, the structure can be understood by the arithmetical combination by which it is represented, and which in itself is very interesting. I shall give first the names of the units, and then the nouns serving as numerals, and beg to observe that I am using the alphabet employed in the literature the language has attained to.

1, *Eni* or *qkan*; 2, *ɛji*; 3, *ɛta*¹; 4, *ɛrin*; 5, *arun*; 6, *ɛfa*; 7, *ɛje*; 8, *ɛjɔ*; 9, *ɛsan*; 10, *ɛrea*; further 20 *ogun*; 30, *qgbqn*; 200, *igba*; 400 *irinwo* or *irino*; 2000 *qgba*. *Eni* (1) enters only into the formation of *ekini* (the first): in other compositions *qkan* is used; the first syllable of these words is a prefix that can be thrown off, and enters into contraction when a vowel precedes. These words are radicals with the exception of *qgba* 2000, which is a compound, but it does service as if it were a radical. It would be difficult to find out their meanings, the natives give none; the second syllable is in the form of the verb, but the first question would not be What is the meaning of the verbal word? but, Which of three roots is it? for we have three different tones on

¹ ɛ=e in met; q=law.

the root of the same sound, *jì*, *jí*, and *jí* low, middle, and high tone. Even if this point were settled, strong doubt would still fall on the connection between the meaning of the root in ages past and present. As cardinals, these words convey to the Yoruba ear and mind two meanings; first, the number and then the thing the Yorubas especially count, and this is money (shells) *Cypraea moneta*; *oco* in Yoruba, cowries in English. If the first syllable is emphasised, the meaning of the word is, 1, 2, 3, 4, &c., cowries, therefore on the question How many cowries? the answer is given in these radicals. Other objects are counted only in comparison with an equal number of cowries, for a nation without literature and without a school, knows nothing of abstract numbers. The ordinal numbers are formed as: *ek-ini* the first, *e* is prefix, *k* stands for *ka*, to count; but the numbers 20, 30, and all multiples of 10 do not take *ek*, but form the ordinal by placing the number after the object counted. The adjective numeral is formed by prefixing the number with *mu* (to take), but the *u* is always thrown out; *qkan* can not take *m* when alone, just so 20, 30, and all multiples of 10, but when a unit precedes 10, the unit takes the *m* as: *eniam ejilelogun* that means twenty-two persons: but *qgun enia* twenty persons; this *m* explains the *meji*, *mẹta* in the polyglottas of Clarke and Koelle.

Proceeding now to the compositions, we meet the simplest form in 11, 12, 13, 14=1, 2, 3, 4, plus 10. Here it must be observed that the language has a great ability to reduce composite terms of numerals to short ones, *e.g.*, 1 plus 10 is in words *qkanlelẹwa* which turns out to be *qkanla*, &c. We shall find 10 *qwa* making an important figure as a long *a*.¹ Between 14 and 15 a break, as it were, takes place, 5 is never added to 10, but regularly subtracted from the following next higher tenth, and 4, 3, 2, 1, follow in its wake. We say therefore, 15, 16, 17, 18, 19=5, 4, 3, 2, 1, minus 20 and so on in every case of 5, 4, 3, 2, 1, before the next higher tenth, whilst 10, 20, 30+1, 2, 3, 4, are formed by addition; in both cases, addition and subtraction, the smaller sum is preceding the larger one. The word for addition is *le*, to be over, to be more: that for subtraction is *di* or *din* by dialectical difference, to lessen. Both verbs throw off the vowel when a vowel follows; if the smaller sum is placed after the larger one, it must be joined to it in a proper sentence with the verbal pronoun, it is more, *o le*, it is less, *o di*; the words for 1, 2, 3, 4, 5, are never shortened with the exception of 5, in 15 and 25 where *arun* 5 is replaced by *ẹ* (like *e* in *met*) thus *ẹdogun* for *arun ddogun*; by this rule we find that the numbers between every

¹ In the words 50, 70, 90 *ewadi* (10 from) turns *ad*.

tenth are formed of a line of addition and one of subtraction. We must now see how the tenths are built up. We proceed from 20. *Ogun* in composition *og* or *og* sometimes even *o* as the first number that admits of multiplication; going on thus: $20 \times 2, 3, 4$, up to 20 times 9; but we must ask how are the numbers formed which are not even multiples of 10, such as 30, 50. Here, again, subtraction steps in. We have $50 = 20$ times 3 minus 10; $(20 \times 9) - 10 = 170$; 50 *adota* = *ewa diliogola* = $(20 \times 3) - 10$, $20 \times 5 = 100$; $(20 \times 6) - 10 = 110$, &c., but thirty has a word of its own, namely, *ogbon*; of its etymology I could hear nothing. With $80 = 20 \times 4$ compare the French *quatre vingt*, the only instance of this form in the European languages.

With 185 we meet a new word, and with it a new factor of multiplication: it is *igba*, 200, for we say, $185 = (200 - 10) - 5$. 200 is a sum of money that owed its origin to the way in which cowries are counted and collected (swept) together (*gba* means to sweep, *gbale*, to sweep the floor, therefore *igba* is money that is swept together). Here we may explain the origin of this somewhat cumbersome system; it springs from the way in which the large sums of money (cowries) are counted. When a bagful is cast on the floor, the counting person sits or kneels down beside it, takes 5 and 5 cowries and counts silently, 1, 2, up to 20, thus 100 are counted off, this is repeated to get a second 100, these little heaps each of 100 cowries are united, and a next 200 is, when counted, swept together with the first. Such sums as originate from counting cowries are a sort of standard money, 20, 100 and then especially 200, and 400 is 4 little heaps each of 100 cowries, or 2 each of 200 cowries, representing to the Yorubas the denominations of the monetary values of their country as to us $\frac{1}{2}d.$, $1d.$, $3d.$, $6d.$, $1s.$, &c.: from the habit of counting 5 and 5 the fashion of subtracting may have taken rise, from the first lowest sum of uniting 5 and 5, that is $20 = 5 \times 4$ that of multiplying 20; the nature of the action, joining by a sweeping motion of the hands the 2 heaps of 200 each, suggested the new term *igba* and a number of such heaps lying about on the ground shows the fitness of multiplying 200 with smaller numbers as an easy way to rise to higher sums. Moreover, it must be borne in mind that in trade only sums which are multiples of 5, 10, 15, 20, &c., may reasonably be asked as fixed prices by which the reckoning is made up; sums lying between 5 and 10 are not to be thought of, negotiations of higher values *e.g.*, of 600 cowries are carried on upon the same principle, as, for instance, the seller will ask 1000 cowries, the buyer will propose 900, &c.: thus the inconvenience of cumbersome numerals is not felt in trade affairs, and when intermediate sums are to be named the expression in words always proceeds upon addition to or sub-

traction from the next standard sum, *e.g.*, $777 = (200 \times 4) - 23$. We should expect a regular progress from 200 onwards. However, the first multiple of 200 (400) is not formed upon this rule; it is *irinwo* or *irino*. Unable to find a derivation of the word, I suppose it is as much as *grin owo*; this cannot mean 4 cowries, but can carry an allusion to the 4 heaps of cowries which are counted, each having 20×5 , or to the 2 heaps of 200 each, either 4 heaps of 100 or 2 of 200 each being united, for 400 is in counting cowries a principal sum; 5 heaps of 400 make 2,000, or in English one head, the chief standard sum by which cowries are bought or sold against silver and gold. From 400 is derived 300; *irino di qgorun* becomes *qdun*—300, a sum that, as the half more of 200, finds frequent application; compare 1s. 6d. The tenths between 200 and 400 and 500, &c., are framed by addition or subtraction $190 = 200 - 10$ and $210 = 200 + 10$: in the words of the language the smaller sum precedes the larger one, but the sound *o* (as in *law*) will not well afford a contraction with *le*=more, or *di*=less, therefore the composition with 300 (*qdun*) would be 300 *o le* 10, &c., which sounds more fluent, *e.g.*, 355 would be framed thus: 300 *o le* $(20 \times 3) - 5$, but we would form 360 by subtracting 40 from 400, &c. In the same way the tenths beyond 400 are given by addition, $400 + 10$, $400 = 50$, but in 460 subtraction would be preferred, $500 - 40$, in words 40 from 500 *oji di lēdegbeta*—40— $(100 - 200 \times 3)$. In the words for 500, 700, 900, 1,100, 1,300, 1500, 1700, 1900, we have 100 deducted from the next higher multiple of $200 \times 3, 4, 5$, to 15. As in 15 and 25 *ed* stands for *arundilogun* and *arundilqgbqn*, so in each uneven multiple of 200, *ed* stands for 100 from 600, 800, 1000, 1200, &c. It is true the proper term would be *qd* = 100 from 600, 800, &c., (*qgorund*), but the strength of euphony of sounds is so overcoming that *ē* is preferred on account of the following *ē*, *e.g.* *ēdegbeta*—*qgorun di igba-ēta*; with 200×10 we have reached the highest sum which is a factor for a further rise in numbers, *e.g.*, $200 \times 10 = ēgba$ 2000, from which the system forms $2000 \times 2 = 4000$ up to 20,000, but 3,000 and 5,000 are exceptions, because 15 and 25 give by multiplication with 200 fluent words, and the sums occur very often in trade: we have therefore $200 \times 15 = 3000$ and $200 \times 25 = 5000$; with 20,000 we have reached the highest compound number, 2000×10 *ēgbāwa*, or commonly called a bag of cowries, *qkē kan* (bag one) because this sum is a load which a man can carry on the head. It is plain the receptacle of the sum provides the name for it; at the same time it is an easy way to express high sums, *e.g.*, one bag = 20,000, 5 = 100,000, 50 bags = a million. We observe that *ed* is used for different values 5, 100, and 1000. 5 less 20, 5 less 30, 100 less 600, 800, 1000,

1,200, 1,400, 1,600, 2,000, and 1,000 less 8,000=7,000 &c.; *ed* serves as an arithmetical formula, the value of which must be found from the following factors in the compound numeral, thus, as above: 5 and 20, from 30, 100 from 600, 1,000 from 8,000.

MARCH 9TH, 1886.

JOHN EVANS, Esq., D.C.L., F.R.S., *Vice-President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From Dr. W. J. HOFFMAN.—A series of Chromolithograph portraits of Natives of Alaska. From water-colour sketches by W. J. HOFFMAN, M.D.

From the CHIEF SIGNAL OFFICER, U.S. ARMY.—[At the request of 1st Lieut. P. Henry Ray.] Report of the International Polar Expedition to Point Barrow, Alaska.

From the UNITED STATES GEOLOGICAL SURVEY. Bulletin, Nos. 7-14. From the COMPTROLLER OF THE CURRENCY, U.S.A.—Annual Report. 1885.

From the DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE.—Archiv für Anthropologie. Band XVI, Heft 3.

From the AUTHOR. Perak and the Malays. By Major Fred. McNair.

— Les Crânes dits déformés. By Juan Ignacio de Armas.

— Place et importance de la Craniologie Anthropologique. By Dr. L. Manouvrier.

— Die ältesten Spuren der Cultur in Mitteleuropa, mit besonderer Berücksichtigung Österreichs. By Prof. Dr. Johann N. Woldrich.

— Das Gräberfeld von Hallstatt. By A. B. Meyer.

From the ACADEMY.—Atti della Reale Accademia dei Lincei. Vol. 11, Fas. 2, 3.

From the ASSOCIATION.—The Journal of the Royal Historical and Archæological Association of Ireland. No. 63, July, 1885.

— Proceedings of the Geologists' Association. Vol. IX. No. 4.

From the SOCIETY.—Journal of the Society of Arts. Nos. 1736, 1737.

From the EDITOR.—Nature. Nos. 852, 853.

— Science. Nos. 158, 159.

— Revue d'Ethnographie. 1885. No. 6.

From the EDITOR.—*Matériaux pour l'Histoire de l'Homme.* 1886.
Feb.

— *L'Homme.* 1886. No. 2.

— *Bullettino di Paletnologia Italiana.* 1885. Nos. 11, 12.

— *Annalen des K. K. Naturhistorischen Hofmuseums.* Wien.
Band 1. Nr. 1.

The election of MACCULLOUGH BEY, of Cairo, was announced.

Dr. GARSON exhibited and described some instruments for Anthropometric research, upon which Mr. A. L. LEWIS and Prof. THANE made some remarks.

Dr. JOHN EVANS, F.R.S., exhibited some worked flints from Albania, and a collection of stone implements from India.

Mr. ARTHUR J. EVANS, F.S.A., exhibited some Albanian flints and old English strike-a-lights.

Mr. W. H. PENNING, F.G.S., exhibited some stone implements from South Africa.

The following paper was read by the author :—

On the FLINT-KNAPPER'S ART in ALBANIA. By ARTHUR J.
EVANS, M.A., F.S.A.

[WITH PLATE I.]

THE Albanian gun-flints and strike-a-lights that I am able to exhibit will be of interest to anthropological students as the most perfect existing representatives of what we may fairly regard as the oldest of European industries. In the course of several journeys through the Illyrian countries between the Danube and Adriatic, I had often been struck with the beautifully worked flints exposed for sale in the bazaars, and whether I noticed them in Bosnia, in Servia, or Bulgaria, I was always informed that the place of their manufacture was in Southern Albania.

During a recent journey through Epirus, I was so fortunate as to observe in a street of Joannina an old Albanian flint-knapper practising his truly elegant art. Squatting in Turkish fashion on the pavement, he took a roughly broken flint out of a small sack by his side, and having, with a small, stumpy, flat-ended hammer, knocked off a fragment suitable to his purpose, he proceeded, with a hammer of more attenuated form, to flake the fragment into shape. The hammer used for this purpose—a specimen of which I am also able to submit to this Institute—was a small elongated section of a square, rudely beaten, iron bar about $2\frac{1}{3}$ in. long by $\frac{1}{3}$ in. broad, fitted by means of a hole

in the middle to what seemed a very slender handle. Using this instrument with really marvellous dexterity, he now chipped out the flake that was to form the nucleus of the future gun-flint or strike-a-light into the requisite shape—a square or oblong with slightly incurved sides. The requisite shape was given by short, swift side-strokes of the hammer, and it is to be observed that for this finishing process the blows were given, not with the small flat end of the hammer, but with the sharp side angles. The minute precision of the stroke must require long practice, and the skill of the Albanian workmen will be best judged by the specimens exhibited, which are by no means exceptional in their finish.

I persuaded the old flint-knapper, whose name was Békir and who was a Mahometan Albanian from Tepelen to accompany me to the place whence he obtained his flints. This was a range called Gramenohoria, about two hours distant from Joannina, not far from the village of Dobro. The flints were mostly of tabular shape, scattered in profusion about the summit of a limestone plateau, but though I searched diligently, I was unable to discover any signs of their having been used for manufacture in ancient times. So far as I am aware, no flint implements of prehistoric date have been found either in Epirus or Albania, though several polished stone axes of diorite and, I believe, other materials have come to light. This deficiency is the more surprising when it is compared with the abundance of finely worked arrow heads and lance heads on the opposite Italian coasts—the ancient Iapygia, Messapia, and Apulia—which were largely peopled, as we know from philological evidence, by immigrant tribes from the Illyrian and Epirote mainland in prehistoric times. Speaking generally, I may say that the few Neolithic remains with which I am acquainted from the western part of the Balkan peninsula, including Dalmatia, fit on to those of prehistoric Greece, including parts of Asia Minor, and are characterised by the absence of implements of flint. The celts discovered in this old Illyrian region are generally stumpy, of nephrite and other materials, and only in Northern Dalmatia, *e.g.*, in a cave near the source of the Cettina, about Nona, the ancient Ænona, and in the Isle of Osero in the Quarnera, have flint flakes been hitherto found. It is possible, however, that a careful examination of the flint producing districts of Albania may result in the discovery of some site of ancient manufacture. At present the chief site of flint-knapping industry is Valona and its neighbourhood, notably the village of Drashovitz, where, according to an informant of Von Hahn,¹ the flint lies in layers at some depth

¹ *Albanische Studien*, p. 72.

beneath the surface and has to be procured by digging. Certainly it would be difficult to find a more appropriate site for the manufacture of the ancient *ceraunia* than upon the flint-producing soil of the Acroceraunian Mountains.

It will be seen that the strike-a-lights, as exposed for sale are partially cased in ornamental lead sheaths, studded with glass gems, and otherwise adorned with something not unlike the ancient "honeysuckle" pattern. These æsthetic adjuncts, as well as the highly-finished implements themselves, are very characteristic of the Albanian race, which stands alone amongst the Balkan peoples, and, it may be added, the primitive population of Europe generally, in its love of ornament and display; the trade in gun-flints has indeed continued to flourish mainly owing to the affection of the Albanian highland clans for the old silver-mounted flint-locks. Trade, however, has become depressed since the brigands of Pindus have taken to the Martini.

Comparing the Albanian flints with those produced by our Brandon flint-knappers, and with Old English, French, and German forms, it will be seen that they show the peculiarity of being uniformly chipped on both faces, instead of presenting one flat side. They are not, like the English examples, so much the result of two or three bold strokes, but are fashioned with a minute care that recalls the "beautifully even surface chipping" of neolithic times, justly described by Mr. Skertchley¹ as, in Britain, a lost art.

Explanation of Plate I.

Fig. 1. Iron hammer-head used in Albania for dressing flints.

Figs. 2, 3, 4, 5. Gun flints and strike-a-lights, with and without leaden sheaths. The characteristic ornamentation is shown in figs. 4 and 5.

Fig. 6. Iron used for striking a light.

All the figures in this plate are of natural size.

DISCUSSION.

The CHAIRMAN pointed out the difference between the gun-flints of Albania and those made in this country. In making our flints a broad flake is first struck off, and this flake is then broken into three pieces. Each piece is formed into a gun-flint by having its edges dressed on an anvil. But in the Albanian method the two faces of the flint are delicately chipped by a series of blows producing surface-flaking, somewhat like that seen on some of the ancient implements found in Denmark. The speaker described the

¹ "Manufacture of Gun Flints," p. 41.

specimens that were exhibited to the meeting, and referred to the notches seen on some of the old mounted flints of Albania as evidence that they were used as strike-a-lights. The want of regularity in the outline of certain flints is probably due to their having been employed for this purpose.

Prof. RUPERT JONES congratulated the Institute on having received an explicit account of the manufacture of elaborately chipped flint implements by a native maker of gun flints and strike-a-lights, from one who watched and understood the process, and who took the trouble not only to secure tools and specimens, but to see where the flint was obtained in the district. The style of workmanship was interesting as bearing on the preparation of some French and other highly-chipped flint implements from prehistoric localities.

The Secretary read the following notes:—

NOTES *upon a few* STONE IMPLEMENTS *found in* SOUTH AFRICA.
By W. HENRY PENNING, F.G.S., &c.

[Abridged.]

THERE is a striking general resemblance between many of these implements and those of palæolithic age found in Europe. The stone axe found near Pretoria especially, might, from its appearance, have been taken from the valley-deposits of Hoxne or of Abbeville. But at the same time there are essential differences in the mode of occurrence. The palæolithic implements of Europe are embedded in ancient river-beds, while those of South Africa are found on the surface, as are the neolithic elsewhere. It might be assumed, therefore, that the African examples of palæolithic type are more recent than the European, and consequently, that the tribes by whom they were made spread southwards from Europe.

But this, although probable, is not certain because South Africa has been continental for a very long period (the interior probably since the close of the oolitic epoch) and was carved into its present form long before the quaternary gravels of Europe were in process of accumulation. The rivers, in proportion to area, are few and insignificant, and during the more recent periods there has been comparatively little denudation. The resemblance, therefore, testifies only to a contact between the races somewhere and at some time, but the disparity in mode of occurrence affords no clue to age—that is, to the direction of their migration.

The implements exhibit extreme weathering, some indeed, look water-worn, but they can never have been subject to such

action. They are very numerous, also, in some localities. The materials mostly used were quartzite, indurated shale, and trap-rock; and for the smaller weapons, hornstone, ribbon-jasper, and chalcedony.

DISCUSSION.

The CHAIRMAN reminded the meeting that the subject of South African stone implements had on several occasions been discussed by the Institute. The implements found on the surface belong to widely-separated periods, for while some are certainly not of remote antiquity, others may probably be referred to the palæolithic period. Although the implements are commonly obtained from the surface, yet there is more than one well-attested instance of their having been discovered at considerable depths. Even if found on the surface this fact would not necessarily militate against a high antiquity in a country where sub-aerial denudation is not energetic. The speaker compared some of the South African implements with those found in East Anglia, and called attention to the similarity between certain quartzite implements from Africa and those found in the laterite of India.

Prof. RUPERT JONES remarked that Mr. Penning's paper was rich with facts and inferences of great value. They would be still more valuable if described with reference to some communications already published by the Institute, so as to bring them under some recognisable classification as to the forms of implements, and the places and modes of deposition. The source of the quartzite from which many of the implements have been made should be defined if possible. He also thought that the different styles of workmanship did not necessarily imply the same relative antiquity for such implements in different countries. The author, in his account of the superficial denudation and its results had not regarded, it seemed, the great glaciation which South Africa had suffered in post tertiary times.

Mr. BERTIN asked if care had been taken to ascertain the real date of the stone implements, as the bushmen of the present day still use stone implements in preference to others. If they use metal it is as they found it, a nail, a piece of iron, &c. It is true that for many centuries the bushmen have been using the same kind of weapons, but ancient weapons would be exactly as the modern ones, and could not prove anything.

Mr. A. L. LEWIS, remarked that the material of the axes exhibited and the manner in which they occurred seemed to him to resemble those found on the surface in the Côtes du Nord, France, and considered—he hardly knew on what grounds—to be palæolithic rather than those of Abbeville; but, even if the resemblance between the South African and the French implements were greater than it really is, he thought they would all agree with Professor Rupert Jones in considering that the resemblance was no proof of any connection between the makers of the implements in the two countries. Major Feilden, who had exhibited to the Institute a

very large collection of implements of different types and different materials from South Africa, was, he believed, quite opposed to the idea of their being of anything like European palæolithic antiquity. The effect of the rains in South Africa upon the surface of the country was, he understood, very great, and might account for water rolling and depositing at considerable depths.

Mrs. CAREY-HOBSON said that upon one of the Karroo flats, near a permanent spring, she had come upon a factory of implements; they were there in all stages of manufacture, most of them small for hunting purposes, and the stone used was almost black, indeed some that she had found in a more distant part of the plain, evidently polished by use, were perfectly so. The rock she believed, was basaltic: there were two or three blocks at this place which must have been brought from the mountain range thirty or forty miles distant. Stone implements were also constantly turned up by the plough on the Karroo farms, many of them being of a close-grained stone of a light fawn or drab colour. She had never found any *flint* implements. The flints used so much with the tinder boxes were all imported.

Mr. PENNING has since sent the following note in reply to Prof. Rupert Jones's enquiry:—

The Pretoria implements are made from quartzite beds of the Megaliesberg Mountains; the Orighstad implements from quartzite of the surrounding hills. In the Vaal River there is chalcedony, and trap-rock occurs in nearly all localities in abundance.

The Secretary read extracts from several letters addressed by Mr. Bruce Foote to Dr. John Evans, relative to recent discoveries in India of which the following is the substance:—

NOTES on PREHISTORIC FINDS in INDIA.

By R. BRUCE FOOTE, Esq., F.G.S., Geological Survey of India.

In the beginning of 1881 Mr. Foote broke fresh ground geologically near Cape Comorin. The people in that region consume an immense quantity of shell-fish collected on the coast and carried many miles inland, but nowhere could the writer find any accumulations comparable with the European kitchen-middens, though he looked out for such deposits all round the coast. The only object of archæological interest discovered was a small bone pendant washed out of the black mud of a submerged forest at Valiumkkam, on the south coast of the Madura district, about 25 miles west of Pamben Strait. The object has a hole drilled in it, and is ornamented with simple incised lines.

A few days previously to this discovery the author had made an interesting find of cores of the Jubbulpore type, at a place about fourteen miles south-west of Tutikorim. Here a hill of blown sand had been denuded by the wind on its south-west side to a depth of fifteen or sixteen feet below the present adjoining level. The cores, with a number of flakes and some fragments of red pottery, lay on the surface of a bed of dark red loam under the moving part of the sand. All the cores and most of the flakes are of reddish brown chert—a stone foreign to that part of the Tinnevely district. The other flakes consist of translucent quartz, quite unlike any quartz which the writer had found in that locality. The quartz is stained red from the oxide of iron which abounds in the deep red blown sand that had covered the flakes. The pottery is of fair quality, rounded at the edges by the action of the sand-blast, and the largest fragment shows traces of an indented pattern made by impressing the end of a narrow wedge-ended stick.

The writer's next find was made in 1883, near the celebrated diamond mines of Banaganpalli, in the Kurnool district. Here he came upon either a village-site or a place where burial had taken place, at which a considerable quantity of pottery of the characteristic red and black glazed type had been buried, together with a few good cores of the Jubbulpore type, some iron implements, much rusted, and some pounding stones. There were also found a large stone pestle and a slyking stone, both well polished. The writer likewise found a good spindle-wheel in pottery; a bead of white shell; the right valve of an *unio*, of which the lower edge had been ground away; and a few comminuted bones, some of which may be human. The field to the east of the pottery site yielded a good number of cores, scrapers, and flakes, and a large quartz of jasper, chert, agate, Lydian stone, &c., all foreign to the locality, and apparently, brought together to be fashioned into flakes and scrapers.

The pottery was buried at a very small depth, and had consequently been greatly broken by the trampling of cattle pasturing over the spot. Many of the vessels, however, can be largely restored by piecing the fragments together. Vessels of nearly a dozen different forms were found and of these, two are not represented among the antique pottery in the Madras museum, derived from various old tombs and cromlechs in the south. Of these forms, one is a deep drinking vessel with pointed oval base, evidently meant to be held in the hand or rested on a pottery ring. Several of the latter, but of a larger size, were found.

The other form was like a flowerpot with a small base and very large mouth. Among the iron implements are three

unquestionable arrow heads, barbed on one side only, and an implement like a very thin palstave, with one sharp-edged rounded end. The occurrence of these iron implements and pottery, with the chert, agate, and jasper cores is very interesting, and as far as the writer knows, gives the first clue to the real age of the cores. He got about 120 cores, many of them capitally made. The agates used are from the Deccan amygdaloidal traps, and must have been brought from the bed of the Kistna, a distance of over forty miles.

Early in 1884, while hunting for coal, to the east of Hyderabad in the Deccan, Mr. Foote came across traces here and there of neolithic work, in the form of broken implements (celts). At two places he found old village sites clearly indicated by great quantities of broken pottery of the glazed red and black type. Unluckily he had not time to explore them. At the second place, some twelve miles west of Khummmummett, he got a broken stone cylinder of polished sandstone, a sort of rolling pin. On a hill of granitic gneiss, some thirty miles east of Hyderabad the writer found at least a dozen highly polished grooves, eight to ten inches long, worn into the rock probably in giving an edge to celts. A few miles off he found the ground thickly strewn with old flakes, amongst which was the first half of a good sized rough celt, similar to some he had found near Bellary with polished celts, about which he wrote a letter to the *Geological Magazine* which was published in the February number for 1873. These celts he exhibited at the Vienna Exhibition, and finally presented to the Calcutta Museum.

In December, 1885, Mr. Foote revisited Bellary, and looked up the localities where he had found the celts, both chipped and polished. He got several more in the north hill at Bellary, and a few days after found a large settlement of the celt-makers on the north side of the Peacock Hills, the south side of which he visited in 1872, with Mr. Frazer, C.E., the original discoverer of the Bellary celts.

Mr. Foote's reasons for regarding many of the localities at which he got numerous celts and other implements as old settlements or village sites of the celt-makers are the following: Wherever the celts and other implements were found in large numbers, the hills on which they were found showed many signs of human habitation. Many small terraces had been raised among the great blocks of granitic gneiss of which all the hills but one consist.

Many of the terraces were evidently constructed with reference to the convenient proximity of rock shelters, and in most cases they lie on the eastern flanks of the hills where they obtained early shelter from the blazing afternoon sun. On the terraces

and flats are large quantities of flakes produced by the manufacture of the implements, and implements in all states of completion, from the roughest to the highly polished. As the great majority of the celts and most of the other implements are made of dark greenstone or other hornblendic rock, these flakes and implements present a strong contrast in colour to the pinkish and greyish granitoid masses forming the hills.

The made ground on the terraces and under the rock shelters is largely made up of broken pottery (all of antique type where the shapes are recognizable) mixed up with much ash, more charcoal, and occasional bones and teeth (mostly bovine).

Where the celt manufacture was most energetic many surrounding convenient flattish rocks show shallow pan-shaped hollows, evidently worn by the grinding of the implements. Many of these are in groups of fours and fives, indicating that the polishers were sociable, and squatted together while at work. In one place about twenty in a space not fifteen yards square. The well preserved and little weathered celts seem to have been covered up to a great extent, and probably for long ages, and only lately exposed by the action of heavy rains. Most of the polishing places were on solid rock, but a few were on large or medium-sized blocks, the latter generally broken.

The edging hollows such as were described on the hill east of Hyderabad are not common in the Bellary country, but Mr. Foote noticed some capital examples close to a flat broad pan on the north hill at Bellary. He procured celts, &c., from twenty-five different places of which twenty-two are on hills. In every case but one the greenstone of which the implements were made had been brought from a distance, and often for many miles. In the one case where the greenstone had been taken from a large dyke cutting through the middle of the settlement the manufacture had been carried on on the largest scale, and the writer procured very large numbers of rough implements. Many, though quite rough, are of capital shape, even when of very large size, and if finished would have made noble celts.

The chippers evidently had an eye to saving themselves labour, and collected suitable fragments from the surfaces of dykes yielding fit stone. In several cases they had brought rough fragments of distinctly "celty" shape from distant dykes on to their granitic gneiss fastnesses and had not put them to use.

All the hills on which the principal settlements occur were places of great strength and well defensible against great odds! All rise abruptly from two to six hundred feet out of the nearly dead level plains now covered by the bare cotton soil plains for which the Bellary country is notorious.

Mr. Justin Boyd, Manager of the Madras Bank (branch) at Bellary, is carefully exploring the two settlements at Bellary, and it is hoped will get much out of the pottery and ash heaps. He has half a large perforated hammer stone of the type figured on page 204 of Mr. Evans's "Ancient Stone Implements."

The group of settlements of the celt-makers lies within the limits of the old Bellary district, lately divided into two, Bellary and Anantapur. The greater number of the settlements lie within a triangle of which the Madras Railway between Bellary and Gooty (Gutti) is the hypotenuse and Uderpy Droog the apex of the opposite angle. A smaller group of settlements lies to the west of Bellary, but is not of any less interest.

In the western group several settlements show a special feature not noticed in the easterly ones, namely, large accumulations of a light yellow scoriaceous slag. The most remarkable of these slaggy heaps, some fifteen miles west of Bellary, has been described as a volcanic cinder cone, but when Mr. Foote visited it in 1872, he found a celt and some rubbing (mealing) stones and pounders in the midden-stuff between layers of the slag.

His second visit, early in 1885 quite confirmed his ideas that this must be a settlement, for he found several more pounding stones washed out by the rains which have scored the mound pretty deeply. This is the mound he referred to in a letter printed in the *Geological Magazine* for April, 1873. Mr. Foote found smaller heaps of similar slag at three other localities still further west of Bellary. In these cases the origin of the slag heaps was even more distinct, for among the slag and under it were large numbers of mealing and pounding stones, broken pottery, and a fair number of celts in various states of completion, and withal a considerable number of bones of oxen. A large slag mound of similar character near the ruins of Vijjnanager, still further west, is the subject of an old legend which states it to be the result of the cremation of a wicked giant "Bali," killed by Rama on his way to Ceylon.

The southern celt-makers were probably not one whit inferior to those of central India, any more than are the living Dravidians behind their northern neighbours. As far as Mr. Foote's observation goes the southern folks are in every way equal to the more be-praised Bengali and Hindu tribes.

DISCUSSION.

The CHAIRMAN described certain Indian stone implements which were exhibited to the meeting. Some of these, of palaeolithic type, wrought in reddish quartzite, were obtained by Mr. Foote in the laterite deposits of Madras. Three polished celts from Central India

were compared with similar implements from Ireland. Attention was called to some well-shaped jasper cores, from which flakes had been struck; one of the cores being so perfectly symmetrical as to have been mistaken for a fossil fruit. A characteristic type of stone adze from Burmah, presenting a tang and a square shoulder, with a long bevelled edge was exhibited and described. Its shape is somewhat like that of an ordinary plane iron.

Professor RUPERT JONES alluded to the probably great antiquity of the quartzite implements first found in the laterite, as they were regarded as having been deposited on the shallow sea-bed of the coast, subsequently raised up as land. He did not clearly understand what relationship as to probable age and mode of deposit those now described had to the others. He enquired how far the quartzite tools found in Devonshire resembled those of India and South Africa.

MARCH 23RD, 1886.

HYDE CLARKE, Esq., *Vice-President, in the Chair*, which was afterwards taken by C. H. E. CARMICHAEL, Esq., M.A.

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

- From the GOVERNMENT OF MADRAS.—Administration Report of the Government Central Museum for the year 1884-85.
- From Dr. W. J. HOFFMAN.—Notes on certain Maya and Mexican Manuscripts. By Cyrus Thomas.
- From the AUTHOR.—Flint Implements from the North-east of Ireland. By W. J. Knowles.
- Effigy Mounds in Iowa. By T. H. Lewis.
- On Jadeite Ornaments from Central America. By F. W. Putnam.
- Ethnographische Karten von Richard Andree.
- From the VEREIN FÜR ERDKUNDE ZU LEIPZIG. Die Seen der Deutschen Alpen. By Dr. Alois Geistbeck. Mittheilungen, 1884.
- From the K.K. AKADEMIE DER WISSENSCHAFTEN, WIEN. Sitzungsberichte, Philosophisch-Historische Classe. Band cvii, Heft 1, 2; Band cviii, Heft 1, 2, 3; Band cix, Heft 1, 2: Mathematische-Naturwissenschaftliche Classe. I. Abthlg. 1884, No. 6, 7-10; 1885, No. 1-4; II. Abthlg. 1884, No. 6-10; 1885, No. 1-3; III. Abthlg. 1884, No. 3, 4, 10; 1885, No. 1, 2. Register XI. Almanach, 1885.

- From the ACADEMY.—Atti della Reale Accademia dei Lincei. Serie Quarta. Vol. II. Fas. 4.
 —Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg. Tom. XXX. No. 3.
 From the INSTITUTE.—Proceedings of the Canadian Institute. Third series. Vol. III. Fas. 3. No. 144.
 From the INSTITUTION.—Journal of the Royal Institution of Cornwall. Vol. VIII. Part 4.
 From the SOCIETY.—Journal of the Society of Arts. Nos. 1738, 1739.
 —Proceedings of Society of the Antiquaries. Second Series. Vol. X. No. 3.
 From the EDITOR.—Nature. Nos. 854, 855.
 —Science. No. 160.
 —L'Homme. 1886, No. 3.

The following paper was read by the author:—

*The PRESENT CONDITION of the NATIVE TRIBES in
 BECHUANALAND.*

By C. R. CONDER, Captain R.E.

THE subject on which I have been invited by the president to read a paper before you is that of the present condition of the native tribes in Bechuanaland. During the recent expedition under Sir Charles Warren, my duties, as Boundary Commissioner and otherwise, led me to study, to the best of my ability, the character and condition, especially of the Batlaping and Barolong divisions of the Bechuana Kafirs; and in addition to the result of personal enquiry, I obtained a good deal of information from such residents as have longest dwelt among these tribes, especially from the Rev. W. Ashton, a friend of Dr. Livingstone, who has lived in Bechuanaland since 1843, and from the Rev. J. Mackenzie, who dwelt for many years at Shoshong, the chief place of the great Bamangwato chief, Kama. Very valuable information has also become lately available, in the voluminous Blue-Book on Native Laws and Customs, published by the Government of Cape Colony. From such sources I collected information, which I will endeavour to put in such a form as to afford an answer—so far as I am able to render one—to the majority of the questions contained in the valuable "Anthropological Notes and Queries," prepared by the Committee of the British Association.

Before proceeding, however, to the main question, a few words may be said concerning the surrounding tribes; and as to the present proportions of the various divisions of the Bechuana.

The new Crown colony of Bechuanaland, of which I laid down the eastern boundary, is situated west of the Transvaal, and north of Griqualand West. It includes the territory of the Batlaping and Barolong tribes of the Bechuana, and that of the Batlars, lying further west, near the border of the Kalahari Desert. North of the colony, a large country, inhabited by the Bangwaketse, the Bakwena, the Bakatla, and the Bamangwato, stretches towards the Zambesi. The remnants of the Makalaka (akin to the Basuto) intervene between the northern Bechuana, and the Matabele (a Zulu race), who occupy a rich country, north of the Transvaal. North-east of the Matabele is Mashonaland, a country rich in minerals, extending to the Zambesi. Bechuanaland itself is a pastoral country, consisting of a great plateau, 4,000 feet above the sea, with a fine climate, and grazing lands, said in some cases to be among the finest known in South Africa. Within the limits of the Crown colony there is but little bush, and the country is certainly very superior in fertility to the colonial possessions south of the new colony. The principal drawback is the insufficiency of water; but the rainfall is in many years plentiful, and a small expenditure in public works would greatly improve the country in this respect. The streams during the summer rains become impassable rivers, but the water soon rushes off to the Vaal River, or is lost in the Kalahari Desert.

It is extremely difficult to obtain reliable statistics, as to the numbers of the native population in Bechuanaland. War has not materially affected the question, and the large native families, under a polygamous system, tend to give a rapid increase in numbers. On the other hand, recent famines, and increasing disease, tend to reduce these numbers; while the inroads of white men lead to migrations, which result in decrease of native numbers in the south and east, and corresponding increase in the north and west. It was part of my duty to collect such statistics as were available, but the results were very rough. The fighting men of the Batlaping may, I think, be stated at some 3,000 in all. The Barolong within the colony have, perhaps, 2,000 fighting men; those within the Transvaal were more numerous, but are now dispersing in all directions. Of the northern tribes, the Bamangwato is the largest, and Kama, their chief is said to have 500 mounted men armed with rifles. In addition to the Bantu races, just enumerated, there were till quite lately some 5,000 Korannas, inhabiting the neighbourhood of Mamusa, now within the Transvaal. This settlement has been attacked by the Boers since the return of the expedition. The chief (David Massouw) and 100 men of the Korannas are said to have been killed, and many virtual slaves (or apprentices as they are called) have been made. The settle-

ment seems, in fact, to have been broken up and the land reserved to the natives to have been confiscated.

A rough table of the population would give the following results:—

Within the Crown colony of Bechuanaland	{ Batlaping about	18,000 souls.	
	{ Barolong ..	15,000 ..	33,000
North of the Crown colony.	{ Bangwaketse ..	20,000 ..	
	{ Bakwena ..	30,000 ..	
	{ Bamangwato ..	40,000 ..	
	{ Smaller tribes	60,000 ..	
			150,000
			<hr/> 183,000 <hr/>

I see reason, however, to suppose that these proportions will further be modified by the disappearance of numbers of the Batlaping,¹ in consequence, partly of migration, partly of starvation, from which this unfortunate tribe was suffering when last I visited them at Taung.

As regards the Korannas, they are a Hottentot people, and I only came in contact with them in their locations in Barkly West and at Christiana, in the Transvaal. I was very much struck with the strongly Turanian type of the race. The broad cheek bones, the small eyes, wide apart and slightly oblique, the small mouth (somewhat projecting) and short nose, and even the colour, which is much lighter than that of the Kafirs, called to my mind both the Japanese and also the Turkish peasantry of Asia Minor.

I have heard it stated that the practice of excision, which occurs among the Copts and, I believe, among the Abyssinians, is also existent among the Korannas, as well as circumcision.

Both sexes color their hair with black lead, their faces with red lead, even when wearing European clothing. They consider that this renders them more beautiful, like the Zulus who paint themselves white for the same reason.

As regards the Matabele my duties did not permit of my visiting their country. A mission under Lieut. Haynes, R.E., was sent to the capital Gobilawayo to visit the Matabele king, Lobengula, with a letter from Sir C. Warren. This officer would, I think, be able—judging from my conversations with him—to give valuable information as to this warlike and important tribe.

The Matabele were originally Zulus, who, being unsuccessful in war, under Mosilikatse, were afraid to reappear before the

¹ Sir G. Campbell called attention in discussion to the sparsity of the population, a fact which, of course, ought to render it all the easier to find lands for both natives and white men.

terrible Chaka. They settled in the Transvaal and were driven thence to their present country by the Boers. Their name in Sechuana means "naked" and is due, not to the fact that they are lightly clad, but because they offend Bechuana ideas of decency, not wearing the small fur apron which men and boys always wear among the Bechuana, even when they have no clothes. The Matabele on the contrary wear a wooden box like that of the Zulus. The numbers of the Matabele have been recruited by the education of slaves from among the Makololo, Makalaka and even Bamangwato. The old Zulu type is rapidly dying out through this infusion of Basuto and Bechuana blood, and the warlike prowess of the Matabele is also decaying, so that a regiment defeated near Lake N'gami was not ashamed only last year to return to the King. It is probable that the great chief Kama is strong enough, if supported, and protected from Boer encroachments, to keep the Matabele at home. The latter are moreover well affected to the English.

I now turn to a description of the Batlaping and Barolong, basing my observations on the British Association Queries so far as I am able to deal with them. I was, however, unable to take any measurements of natives or any exact notes concerning colour, anatomy, or physiology. There is great variety in the shades of colour, but it seems that those of the purest blood are the darkest, judging from the chiefs. It is said also that the colour of the northern tribes is deeper than that of the southern, and the eyes larger. As regards odour I can attest that this increases in consequence of violent exertion.

The language of the Bechuana tribes is well known as a branch of the Bantu group. There are no clicks in Sechuana, but the Batlaping on the south are said to have contracted the habit of introducing clicks in some words in consequence of Hottentot influence. The sound represented by Tl as in Tlapi, "a fish" (whence Batlaping or "fish people") approaches a click. The name as will appear later may be connected with a former worship of the fish. The greatest peculiarity which I noticed was, however, the intonation of the language, which is only caught after long residence, and which contrasts strongly with the energetic enunciation of Orientals. Sechuana is a very melodious and liquid language, and the speech of the natives is full of poetic imagery, which is admired so much as to form a distinct feature in their public speaking.

Their confusion of the letters D, L, and R, is also remarkable. They can distinguish B and P which to an Arab sound the same, but which the Turks distinguish. The Sechuana P, indeed, is highly emphatic, resembling that of the Irish as in their pronunciation for instance of the word "ppig"; but the Sechuana word for

God may be written Modimo, Morimo, or Molimo, and the blue wildebeest (or gnu) is called Phudomo, Pulomo, or Puomo either sound being recognised by a native. It must be remembered that even the early Greeks did not always distinguish L from R, and the hieroglyphic sign is the same in Egyptian for these two letters. In the east however, D is confused with T rather than as among the Bechuana with L or R.

The Sechuana language, I am told, does not possess any true numerals above six. Seven is "shupa," meaning "look out," and being the name of the forefinger. The word for eight means "two fingers down," nine is "one finger down." Ten is "completion," eleven "completion one finger up." When therefore we come to twenty eight we get the clumsy form "two completions two fingers down."

The traditions and customs of the Bechuana point to their migration from the north-east. The old tribe of the Bahrutsi is still, I believe, not extinct, and an offering of first fruits by Bechuana chiefs to the chief of this tribe seems to show that they are acknowledged as the parent stock. The Barolong have inhabited their country from time immemorial. The stone krantzies which they erected as fortifications against the Zulus under Chaka, I have found all along the present border of the new colony. One division of the tribe migrated into the Orange Free State and returned thence within the memory of middle-aged men; first inhabiting Taung, which now belongs to the Batlaping, who originally lived further west; and afterwards under Moshette, settling at Kunana, a very large native town now placed in the Transvaal. This town is again being deserted by the Barolong.

There seems reason to suppose that the physique of the Bechuana tribes in the south is steadily deteriorating. This is due clearly to the influence of the whites—to the breaking up of the old social system, the laws and customs of which were well adapted to native life; and to the introduction of bad brandy and syphilis. It is thought that the adoption of European clothing has affected the health of the people, but there are clear indications that the asthma, consumption and lung diseases from which the natives suffer are congenital, and, I think, they should rather be ascribed to the excesses of the parents on whom the white men have had a disastrous influence. We have been told lately that the natives are only allowed to buy "ginger pop." If this is the case, I can only say that ginger beer in South Africa produces symptoms indistinguishable from those due to the consumption of brandy; and I have seen brandy drunk by natives in quantities which white men could not consume.

As regards the morality of the people, their indifference to the conduct of the women is very astonishing to any traveller accustomed to Orientals. Some missionaries admit that the morality of mission stations is inferior to that of the old Pagan days. There is a simple explanation of this, as shown by the Blue-Book above noticed. Some missionaries discountenance the old native custom of giving a certain number of cows to the father of a bride, which they regard as equivalent to buying the wife, though this is not the native view. The consequence is that the native girls have no longer a market value, and the control exerted over them by their parents, and especially by the mothers, is relaxed. The morality of the natives after marriage is, on the other hand, probably improved by the influence of the very able and energetic men who accompanied and succeeded Dr. Moffat. The natives are said to be affectionate and fond of their children, and they certainly possess a love of justice and fair play and ideas of right and law which should commend them to Englishmen. Unfortunately, the colonial population have not upheld British reputation in this respect, and the natives draw a sharp distinction between the British—chiefly known to them as soldiers or missionaries, and the colonials—traders and speculators. The prohibition of the sale of spirits is strictly enforced by such chiefs as Montsiwa and Kama who have learned that the introduction of brandy means the destruction of the tribe. This wise prohibition is clearly due to missionary influence.

Under the head of psychology I may note that the Bechuana appear to be an intelligent people. They easily learn when taught, to read, write, and cypher; they are even able to draw maps (I possess a sketch of country by one of the Barolong) and Sechele, chief of the Bakwena, sent his sons to Cape Town to school, and introduced convict labour in his country in imitation of Cape laws. They are, however, slow in their mental operations, as in their movements, and ponder long before answering, thus forcibly contrasting with Oriental volubility. That they are courageous has often been proved; they are, however, neither honest nor truthful as a rule, and small thefts are common. They are fond of giving long and rambling dissertations on trivial subjects and their deliberations in council are endless.

As regards astronomy, they appear to conceive of a firmament like that of the Babylonians, and they say that the sun travels under the earth at night. Some old people still alive have, I am told, heard the noise which the sun makes during this nocturnal journey. They have, it appears, a native calculation of the year, though I am unable to say whether this is lunar or

solar. They have ceremonies connected with the new moon, and on moonlight nights they sit in the kotlas or village yards singing and dancing and drinking Kaffir beer. They also have harvest festivals with dances.

The ordinary native food is a sort of porridge, made of mealies or of Kaffircorn. They do not appear to make bread. They are great flesh eaters, and in addition to game will, when hungry, eat almost any kind of dead animal. I have seen them eating a mule which died of pneumonia. The Kaffir corn makes a sort of stupefying beer, but can only be indulged in by chiefs, except at the great feasts. The natives often ask for tobacco, and smoke short European pipes. They are also said to smoke a kind of hemp. I believe none of the Bechuana tribes eat fish even when living near rivers.

Mr. Ashton gave me information as to the eating of locusts by the Batlaping. The natives go by night with great bags to catch the sleeping locusts. They boil them in large iron pots, then lay them out to dry. When dried, the locusts are winnowed, the wings, legs, and head being blown away like chaff. The bodies can be kept for a considerable time. The eating of locusts is said to give a peculiar smell to those who devour them in quantities, but the natives are so fond of this food that a visitation by locusts, which ruins the white man, is rather welcomed by the Bechuana.

The frequent droughts in Bechuanaland often reduce the smaller tribes to living on berries of the Moretlwa (*Grewia flava*) and Mohatla (*Tarchonanthus*). The Makalahari (or "poor men") and the bushmen who are slaves of the Bechuana in the towns live on game and on roots. Their tribute consists of skins, and of certain parts of animals killed.

A number of the Barolong and the Bakwena and Bamangwato now profess some kind of Christianity. I think that it is certain that in some cases—as, for instance, the great and honest Kama—this profession is sincere. The Batlaping at Taung are pagans, and Montsiwa, chief of the Barolong of Mafeking (or more correctly, Mahiking), remains a pagan, though tolerating Christianity among his people.

Previous to the introduction of Christianity, the Bechuana appear to have had only very vague religious ideas, and their attention was chiefly occupied by the detection of wizards and witches. The word Morimo for God (also used in the plural to signify the Manes of the dead) appears to have meant a great and angry personage living in "the great hole in the North." Morimo sends the lightning—which in Bechuanaland is continuous for hours in summer, the storms being very violent, and the lightning unusually magnificent

and destructive. The Hottentot Heitzi Eibib, who lives in a great hole, seems akin to Morimo. The Sechuana word for soul is Moia, meaning "breath," but they do not seem to have any expectation of future immortality. The ghosts of the dead are, however, believed to haunt the living, and to watch over their descendants. No idols or fetishes appear to exist among Bechuana tribes, and indeed Dr. Livingstone has remarked on this difference between the Bantu tribes and the negroes whom he encountered further north. As regards festivals, the harvest feast, as I saw it at Kunana among the Barolong, was celebrated with dances, songs, and drinking of Kaffir beer or brandy. The men assembled in a circle blowing on reed pipes and jumping round in a slow ungainly fashion. The women marched round outside, clapping their hands.

The initiatory rites of boguera (for boys) and boyali (for girls), will be well known to this Society. They are still practised among the northern tribes at least. Both girls and boys are organised in regiments, each regiment consisting of those within a few years of the same age. The boys of a regiment are circumcised when the chief's son, who commands them, is about 13 years of age. The beating of these boguera candidates with rods of Moretlwa (*Grewia flava*) was observed at Molepolole, capital of the Bakwena, by officers of the recent expedition.

Ordeals are noticed by Dr. Livingstone, namely, the Muavi, or drinking of *goho* juice by women, but on this point I gathered nothing new. As regards wedding ceremonies, there is one of casting an arrow into the hut by the bridegroom, which is worthy of notice as symbolic.

Among superstitions I may mention that of the "evil foot," which seems to correspond to the evil eye. After a birth no man is allowed for some days to enter the hut, and an infant is said to have died from the "evil foot" of a man so entering. It appears that tree worship exists among the pagan Bechuana. Mr. Mackenzie notices the habit of praying before the largest tree in a thick bush. A native entering a village on business will place a stone in the branch of a tree near the road, in order to obtain success in his affairs. I have seen these stones in trees. The custom is no doubt akin to that of Arabs and other Orientals of making cairns under trees, each visitor or passer-by adding a stone to the cairn.

The idea of the Totem may also, perhaps, be traced among these tribes. Many tribe names are derived from those of animals, as Batlaping from Tlapi "a fish," Batuana from Tao "a lion," Bakatla from Katla "a monkey," Bakwena from Kwena "a crocodile." The tribe is said to *bina* or dance before its sacred animal, and at the great council held by the Bakwena to meet

Sir C. Warren the assembly shouted Makwen or "O crocodile man" at each point of the chief's speech. The crest of Sechele, chief of this tribe, is, I am told, a blue crocodile carved in stone. Mr. Mackenzie mentions that certain bushmen *bina* the common goat. It is unlucky for them to gaze on one, and renders them impure. The Bakwena also may not look at a crocodile and Livingstone tells us that they may not look at a zebra or quagga (Pitsi). A man bitten by a crocodile is exiled, yet the Bakwena will eat the flesh of the zebra.

The Puti or duiker, a kind of antelope (*Cephalopus mergens*) is sacred to the Bamangwato, whose chief, Kama, is named from another species, the hartebeest (*Bubalus caama*); and the hippopotamus of the Zambesi is said to be sacred to the Matabele.

There are also superstitions connected with fire. Mr. Mackenzie notes that if the rains are late all fires are extinguished and relighted by the lingakas or witch doctors, who make fire with the fire drill. These doctors are still powerful among the northern tribes. One was seen at Mafeking arrayed in necklace of teeth and hung with charms. They are distinguished from the *moloi* or wizards as practising white instead of black magic.

Some *moloi* were found in 1885 trying to bewitch the boundary line between the Bakwena and the Bamangwato. The latter made them swallow the liquor they had brewed, and with which I believe the boundary cairns were to be wetted. The unfortunate wizards died of their own poisons.

Mr. Mackenzie mentions the "digging of the garden of rain" a heathen ceremony. Charmed seed is planted in the corner of a garden before the sowing begins and the lingaka mount to the hill tops, blow horns and light fires and whistle and shout to bring the rain. They objected that the church bells of Kuruman kept away the rain. Sir Charles Warren on the other hand is held always to bring rain with him, and the rains were more plentiful in 1885 than for several previous years.

When the garden of rain has been sown it becomes unlawful to fell trees save at dawn or sunset, and a grave offence to bring a green bough of the Hackthorn (*Acacia detenens*) into the towns by day during the rainy season.

The lingaka (pl. of ngaka) receive presents of oxen in recompense for their labours. They are robed in baboon skin, and may sit on hyena skins. Children are frightened by being told that the *moloi* come unseen by night riding the hyena to carry them off. Among other unlucky things is the calling of a lion by his name Tao; he is called "the boy with the beard."

As regards birth, marriage and death, I have gathered little beyond what has just been said. There is a ceremony of

purification after childbirth. Levirate marriage exists as among the Zulus, and exogamy seems the common practice resulting in a great mixture of tribal relations. The successor is the eldest son, I believe, in all cases save that of a chief, when "the son of the great wife" succeeds. The great wife may be declared at any time before death. Her son is not of necessity that of the chief. Thus Moshette, by native law, is senior to Montsiwa, being his nephew, son (by law) of the elder brother. I gather however, that Moshette was son of the widow only of the elder brother, and of a common man whom she married some years after the chief died. It is not considered proper in Bechuana society to speak of such a second husband, and the first child of such an union is always supposed to be the heir of the chief. As far as I can gather, this law does not apply to any but chiefs of tribes.

Polygamy and the paying of dower for wives do not seem to be customs attended with any great evils among the natives of Bechuanaland. All the women are married, and I fear it might be said that all (save those influenced by the missionaries) are as unfaithful to their husbands as are the husbands to their wives. As regards dower it should be noted that it forms a sort of marriage settlement. If a husband unjustly sends back a wife to her own people, she receives the cows paid for her as her portion. If she is justly divorced the cows are returned to the husband. The cows for the first wife are provided by the bridegroom's father: those for a second he has to get by his own exertions. A marriage "on credit" is however often possible, one or two cows being paid on account, the rest as the husband gets richer.

If a woman have an illegitimate child before marriage, the father pays so many cows, which when she marries are deducted from her dower. The native mothers are, however, vigilant, and in the old native society illegitimate children before marriage were few.

As regards burials, the chiefs I am told are sometimes buried vertically with bow and arrows and calabash of water. There are no sacrifices at burials, but pottery is broken by the widow over the grave. This I find is also a Chinese custom. No cemeteries are found near towns, for the grave is hidden. In some cases chiefs appear to be buried in their cattle kraals. These seem to be sacred places, and women are not allowed to enter a kraal while the cattle are in it. Among Zulus the spirits of dead chiefs inhabit serpents near their tombs, but this I have not heard of among the Bechuana tribes. Widows and widowers remain in huts outside the village, as being impure for a certain time after the death.

Polygamy is said by missionaries to be decreasing, but this (except among converts) may be due to the decreasing prosperity of the tribes. Formerly, a man became richer the more wives he had, because they used to hoe his mealies. Now, however, ploughs have been introduced and the men take pride in driving a team of eight oxen in a plough. They are also proud of their wagons of sixteen oxen. The women are therefore less active in agriculture. It used to be a common sight to see a company of women hoeing a field, advancing in a line and singing in the intervals of labour. I have, however, very rarely seen women hoeing mealies.

The Bechuana system of government is somewhat akin to constitutional monarchy. The chief has certain counsellors representing each a village or section of the tribe, and each the head of a local council. The younger or less celebrated members speak first: the chief sums up. His decision is much influenced by the opinions of the counsellors who represent the popular wishes; but there is no voting and his decision is final. A good chief finds his tribe continually increased by families which desert the station of a cruel or incompetent ruler. The great fault of the system seems to lie in the power given to the chief, since, if a chief takes to drinking—which is too often the case—disorganisation and ruin ensue among the tribesmen—as in the case of the Batlaping, whose chief, Mankoroane, has illegally signed away the lands of his people, under the influence of drink given to him by white speculators.

The land laws are simple. The land belongs to the chief. He divides it among his head men, and they in turn among their people. There is no division of grazing land. The mealie fields are practically the property of their cultivators so long as they are tilled. I found each patch to belong to an individual, and to be divided generally by untilled land from the next patch. The fields have to be left fallow every third year at least, as the crop exhausts the soil, no manure being used. A chief can only legally assign untilled lands to new members of the tribe, whether white or black. The law as to theft is also very practical. The whole village is responsible. The head man must assist the person robbed, and the responsibility can only be evaded by proving that the spoor (for it is generally a case of horse, cattle, or wagon theft) extends beyond the village lands to those of another village. Thus the whole tribe becomes interested in detecting the thief.

As regards punishments I gathered nothing, but it is certain that white men have even been tried for their lives before Baralong chiefs. As a rule the legal and political proceedings of the Bechuana are remarkable for a love of justice and fair

play, not always found among races higher in the scale of civilisation.

Native trade in Bechuanaland has now been ruined by the incursions of the white races. The evidence taken before a committee of which I was a member showed that before 1880, the Batlaping and Baralong carried on a considerable trade with Kimberley and Barkly in wood, skins, corn, and mealies. Even the Makalaka travelled south to work in the diamond mines until they had earned the price of a wife, and I have seen poor natives on their way to Kimberley, their only provision being a bottle of water. The trade is now extinct, and even the employment has fallen off through the misfortunes of the mining companies.

There is a good deal of hospitality between the tribes. Thus, the Batlaping, who were starving at Taung, went with their families in 1885 to visit Mafeking when the Baralong had a good harvest. These visitors were fed for a month and sent home with bags of mealies in their wagons.

The use of European clothing has become usual among the Bechuana, even up to the most northern part of the Bamangwato country, but in the small outlying villages the women still wear karosses, and carry their small naked children on their backs, tucked up in the skin. They commonly tie a bright handkerchief over their heads. In Mahiking the women wore print gowns and tartan shawls, and the men often wore the knitted bonnet of the Scottish lowlanders. Among the Batlaping, I am told the women continue, even under their skirts, to wear the heavy rows of beads round their waists; and they wear beads round their ankles looking like blue socks. There is much variety in fashion. One year all the women wear blue beads, but on another (perhaps just when a trader has laid in a stock of blue beads) the women all refuse to wear any colour but yellow. Just now very small black pot hats are worn by the men. Some years ago, huge felt hats, like that of Rip van Winkle, were in fashion. The stores are full of these hats now unsaleable. The children wear no clothes, but the girls have a fringe of leather reaching to the knees, and the boys a little skin apron.

I should note that the peculiar straw hat of the natives is still worn by men in some parts of the country. It is of very small size, like that of a Swiss woman, but much smaller. Sometimes it is even worn by young dandies set well on one side of the head.

The Bechuana are said to differ from the Zulus in living together in large towns with a few outlying villages or cattle-posts, instead of being distributed in many villages of smaller

size. Kunana, the largest of the native towns which I visited, contains perhaps 2000 huts, all of about the same size and all of one plan. The native hut is round, but sometimes a horse-shoe shape is now used, and square buildings erected in imitation of the white man. The roof is of grass on rafters of branches resting on a rough centre pole. The Barolong huts are much better built than those of the Batlaping; they are made of sun dried bricks covered with red mortar. The Batlaping use a sort of wattle of stakes and mud. The Barolong in the north make mudwalls to the yards, the Batlaping use scarrums of brushwood very neatly constructed to keep out the sand of the dust storms. The Barolong huts are very clean inside, and Mahiking, among its green trees and rocks, is as clean as well as a picturesque town. The towns of Kanya and Molepolole are still more picturesque, but, I understand, very dirty. In these towns a trader's house or tin shed may always be seen, and generally there are several.

The native fortifications consist of stone krantzes or walls, generally on the sides of Kopjes. We found Mahiking so fortified and Kunana as well; and the old krantzes of Chaka's time have been already noticed in this paper. These walls are thoroughly effective in absence of artillery fire. The native word for such defences is Litaku or "walls." It is curious to note how complicated some of these systems of walls may be made, allowing of desperate resistance after the fashion of street fighting even if the enemy should gain the first line of defence.

The towns are, however, in native estimation, still better defended by the charms of the Lingaka. Mr. Mackenzie mentions in his interesting work, "Ten years North of the Orange River," that *lipeku* or charms are placed on the roads outside the towns. These are generally horns of antelopes set up. This may perhaps only apply amongst Bamangwato, whose sacred animal is the antelope, *puti*. The *lipeku* ox is also sacrificed, being prepared some time previously by having its eyelids sewn together.

The Batlaping are perhaps the most degraded tribe of the Bechuana, and are despised by the Basuto who are more warlike and independent. Indeed, the Basuto are as yet an unconquered people. Nevertheless the Batlaping also can fight desperately as was shown by their refusal of the terms of peace offered, I am told, by Sir C. Warren, and by their subsequent desperate resistance at Takun or Litaku, a place named from its stone walls.

The Bechuana are now in possession of European fire-arms. The Barolong have a few good rifles—express or Westley-

Richards—but not always the necessary cartridges. I have seen them parade with an extraordinary assortment of guns, from an elephant gun downwards. Some were the proud possessors of a cartridge belt for some sixty rounds, containing, however, only perhaps a single cartridge.

The old native arm was the *chaka*, or battleaxe. They never possessed swords, I am told. The shield was an oval of 18 inches by 12, not the long shield of the Zulus and Matabele. The use of bows and arrows among the bushmen, in the western part of Bechuanaland, still continues. The arrows, I learn, are poisoned with the milk of the spurge (*Euphorbia*), or by being left in decaying animal matter, or—according to others—by the poison of snakes. The arrow has a long and fine iron blade, sharp as a razor. The varieties of native arms may be studied in Mr. Mackenzie's book above mentioned.

Turning from war to the chase, it may be noted that among the Bangwaketse and other more northern tribes, the *hopo*, or game trap, described by Dr. Livingstone, is still in use. I found old game pits further south, but near Korwe (a place named from the hornbills which abound in the vicinity) I found one recently prepared. Game is gradually disappearing south of the Molopo, though it is still abundant in the west and north. The lion still occasionally ranges as far south as Taung (a place perhaps named from this beast), and the spotted cheetah is still common in the west, but the elephant and the giraffe are not found in the new colony. The wildebeest, hartebeest, quagga, koodoo, stein-buck, duiker, riet-buck, gems-buck, springbok, blesbok, and occasionally, I believe, the rooibok (pala) are still found in numbers in the less frequented parts of Bechuanaland. The *hopo* which I saw consisted of forty pits arranged in fours, the length of the trap being in the direction of the drive, which was cleverly constructed of thorns—a sort of hedge not conspicuous, but difficult to pass. The pits were 3 feet by 4 feet, and 4 feet deep, with narrow ridges between. I am told that a cavalry horse was disabled, in another part of the country occupied by the expedition, having been ridden into a buck pit during a hunt.

Bechuana society may be considered to consist of four grades beneath the chief. The rich men—sons of chiefs or counsellors—generally of the chief's family, live in the native towns and possess herds of oxen, mealie fields cultivated by their retainers, and wagons driven by their servants. Beneath them comes the agricultural population, also living in the towns, engaging in trade and in native manufacture. The herdsmen, who keep the herds at the cattle posts, are again a lower class, and the poorest are the Makalahari, who are nomadic hunters, living chiefly in the

west, and considered in the light of serfs of the chief. These Makalahari are, in condition, similar to the bushmen, but the true bushmen are not Bechuana, but Hottentots, or akin to the Hottentot, judging from the linguistic evidence. Even the Batlaping still claim authority over bushmen living on the borders of the Kalahari Desert.¹

The chief native manufactures are in leather and in metal. The native smiths are said to be skilful. They use a bag bellows, like that used by gipsys all over the world, which I have seen in Italy and in Syria. They draw copper through holes in a stone to a fine wire. I have, however, never come across any smiths. The Mashona, living in a metalliferous region, north-east of the Matabele, are famous for their metal work, and for the copper ornaments of the women. In the south, Europeans are now employed to mend the ploughs and the wagons of the natives.

The manufacture of karosses continues to be one of the great industries of the Bechuana, and these skins are retailed at a high profit by traders in Kimberley market. The tiger skins are brought from the north, but deer skins, blesbok, koodoo, or more commonly springbok, may be obtained anywhere. Jackal skins and cat skins are among the softest. The skins are supplied in milk, they are tanned with mimosa bark, and the sewing is remarkably neat, a button-hole stitch being used (as I am told by Mr. Ashton) the sewing material being a fine sinew of the animal. Every shot hole or spear mark is carefully patched, and this is often so well done as to be invisible on the outside. Sheepskins are also made into karosses, and form excellent beds. It is usual to wear the needle used in sewing karosses suspended round the neck, in a wooden case as an ornament.

Stone implements in South Africa seem to be chiefly represented by the "bushman stones," which have often puzzled explorers, being found in deserted settlements. It appears to be thought that these were used as weights on the sticks or stakes used by the bushmen in digging for roots, but they do not seem to be now in use. The stone is globular, and the perforation is shaped so as to be smallest in the middle. This may perhaps result from being bored on both sides.

As regards education, considerable progress is made by individuals. Schools have been established by missionaries, and appear to be well attended. A native newspaper has long been published at Kuruman. The nephews of Montsiwa were able to speak, read and write English, and even to understand a map, and draw a rough plan of the roads, with names of places

¹ Bushman pictures are to be found in Bechuanaland, east of Vrijberg, but I was unable to visit the spot.

written in English characters. I have no doubt that their education extended even further, but confine myself to personal observation. The sons of Sechele, I am told, have even composed hymns in their native tongue, but this has not prevented them from falling into habits of intemperance. They were educated in Cape Town, but a native can now receive an elementary European education even at Shoshong. Dutch is more spoken, however, than English, especially by the natives near the Transvaal, but there are many natives who can speak the three languages—including their own.

Native children are a cheerful race; and indeed, in spite of war and famine, the Bechuana are a cheery people, always ready to laugh and sing, and easily forgetting their troubles. The children do not appear to have many regular sports, but are found in every village riding on sticks or cracking whips. They also make little toy huts and kraals; and one officer brought back a small ox made of clay and very fairly formed. These oxen they place in their miniature kraals.

One of the last questions in the text book which I have followed, relates to conservatism and variation. Concerning this, I may say that the natives of South Africa, like the Arabs, are by no means blind admirers of civilisation. They have their own opinions, both as regards individual white men, and also respecting individual white customs or inventions. They regard their own customs generally as being best fitted for themselves, but are willing to accept such improvements as commend themselves on the score of utility. Thus, the wild Bedawin of Syria have adopted firearms, cigarettes and matches, but have not taken to European clothing, or to tall hats. The Bechuana have adopted ploughs, wagons, firearms, hats and European clothing, also brandy, and gold, silver or copper coins. On the other hand, they are attached to their old system of land tenure, and do not always desire to be converted into individual independent farmers under government. Neither do they always recognise the superiority of the Christian religion over their own cruel and stupid superstitions. Nor again do they desire only to have one wife. They regard the payment of dower as a mark of respectability; and the physique and morality of the race—though the latter has never been good—have deteriorated, in consequence of the loss of self-respect and of the decay of the native system of society.

In conclusion, I would venture to assert that our present treatment of the native race in Bechuanaland reflects little credit on us as a nation. It is true that we do not—until attacked by the natives—destroy their villages, nor do we shoot their women and carry their children captive as the Boers

still do, but the native outbreaks are, as a rule, the result of oppression and injustice on the part of white men. Starvation and the illegal seizure of native lands are, perhaps, slower, but not more justifiable, methods of securing that retreat of the black man before the white which Colonial politicians seem to regard as a mysterious action of natural law.

Were such action followed by material development of the resources of the country, we might perhaps regard the result with more satisfaction, but Lord Wolseley was certainly right in saying, only the other day, that the Boer is little above the native in the scale of civilisation. He is, indeed, in some cases lower, for he does not, like the Bechuana, desire improvement, and the extension of trading operations. Were it possible for independent Englishmen to take up the settlement of native questions, on the basis of equitable recognition of all claims irrespective of race, we should, I think, hear little of native outbreaks: and if the Bechuana chiefs were supported in their attempts to keep brandy out of their towns, we should not have to chronicle the final disappearance of the race of which I have thus offered you a slight contemporary sketch.

DISCUSSION.

The CHAIRMAN (Mr. HYDE CLARKE) after referring to the services and claims of Captain Conder, said that it had been an object of the former President, General Pitt-Rivers, that the Anthropological Institute like other learned societies, should in the course of its session have papers on the topics of the day. He considered that if anthropology was to be made a popular study, so also it must be shown to have its practical aspect. These meetings had been inaugurated by the late Sir Bartle Frere in the President's house in a discourse on South Africa, which was a fitting prelude to this paper of Captain Conder. It was more than possible that the observations of Dr. Bleek and others had some foundation, and that clicks, tones and intonations were connected in the origin of language, with the same causes of differentiation, which produced tones in the Chinese and Indo-Chinese languages. Such were not to be considered as having been invented by the Chinese.

Mr. CARMICHAEL, having taken the Chair vacated by Mr. Hyde-Clarke, observed that among the various points of interest which struck him in Captain Conder's account of the Bechuana and neighbouring tribes one was that of their superstitions and folk-lore, and in connection with that topic he desired to mention, besides the Blue book referred to by Captain Conder, the interesting draft Penal Code for the Transkei, of which an account was given in a recent number of the *Cape Law Journal* (Grahamstown) for June, 1885. That code was, he thought, probably the only existing code to which we could turn for an authorised statement of the folk-lore

and superstitions (*e.g.*, witchcraft) of uncivilised races in so far as they touch upon social order. We had had, and it might be said, still had plenty of superstitions in England, and occasionally, as in the case in which William Rufus is known to have sneered at his English subjects for their superstitiousness, the facts have got on record in our history. Mr. Carmichael wished to know, with regard to the dances mentioned by Captain Conder, whether he saw any evidence of their having any astronomical connection, like the dance at the return of the Pleiades, stated to be a ceremony among the bushmen, and with regard to the expressions used concerning the whole tribe as being interested in the apprehension of a thief, whether he might take that to mean that collective responsibility was a Bechuana institution. In moving the thanks of the meeting to the reader of the paper, Mr. Carmichael referred to the pleasure which it gave him to have that opportunity of thanking Captain Conder for his valuable services in the cause of scientific exploration, of which he had, on a previous occasion heard him give an interesting account, at a conference at South Kensington in connection with the Survey of Palestine.

Mr. W. MORRISON, called attention to the chiefs being darker in colour than their subjects. As a rule the governing class of a tribe were lighter, not being so much exposed to the sun. Was there any other example of the D being confused with L and R? The confusion of L and R is common in the Pacific Islands. Another example was *Lima*, which the early conquistadores wrote as *Rimac*.

Mr. BERTIN said that he should like to call the attention of Captain Conder to the ethnological differences between the bushmen and the Bantus which Captain Conder in his most interesting paper seemed not to take sufficiently into account. He spoke of the Bechuanas for instance as having the hair in tufts, which is a bushman characteristic; the clicks also were, according to Bleek, Professor Keane, and others, bushman in origin. As for the tones found in Hottentot and other African languages in the South as well as in the Niger region, they could hardly be taken as a proof of relationship of two races, for we know how and when they were developed in Chinese: and, as noticed lately by Professor Terrien de la Couperie, tones were now being independently developed in Tibetan to compensate phonetical losses. Of course the intermingling of the populations was so considerable in South Africa that Captain Conder had had many difficulties to overcome in his interesting and thorough study of a race, which, if it did not pass away would, in course of time, be so completely modified that for the ethnologist and philologist it would have practically disappeared.

Mr. CHESON, after thanking Captain Conder for his interesting paper, which he said had been pervaded by a true spirit of humanity, referred to Secheli's desire to establish a prison in his territory for the punishment of criminals. He remarked that the late Bishop Colenso had informed him that Cetywayo, on the eve of the Zulu war, was meditating the introduction into Zululand of a similar

institution. Generally speaking, a savage chief, not knowing what to do with his criminals kills them, but the fact that both Secheli and Cetywayo conceived the idea of largely substituting imprisonment for capital punishment, showed a great amenability on their part to civilised ideas of justice. He was glad to hear what Captain Conder had said about the purchase of wives for cattle among the Bechuanas. He could, however, assure him that that system in Natal and elsewhere was fruitful of great evils, and that it often placed young women, whose affections were otherwise engaged, at the mercy of old and wealthy polygamists. He thought that in countries which came under British rule the system ought to be gradually abolished. With reference to intoxicating drinks, he hoped that the Bechuanas had the same power of moral recovery as the Basutos, who after having yielded to the insidious temptations of Cape brandy, and apparently lost all self-control, suddenly awoke to a sense of their degradation, and expelled the brandy bottle from their country. After referring to the cruelties of the Boers to the Korannas, and especially to the neglect of the wounded after the capture of Mamusa, Mr. Chesson thanked Sir Charles Warren and Captain Conder for the good work they had done in Bechuanaland.

The Rev. J. MACKENZIE, expressed the great pleasure which he felt in finding an assembly of learned men in London discussing the subject of Captain Conder's paper. And he was especially gratified with the clear manner in which Captain Conder had put together the observations contained in his paper, which abundantly proved that he was both an able and a trained observer. He might be allowed to supplement, or explain further, one or two matters. In Bechuanaland the cattle paid by the bridegroom under native law to the bride's father was the only way in the olden time of establishing the validity of the marriage and the legitimacy of the children. Without the payment of cattle the father could not establish before natives that the children were his. But Christian natives were getting accustomed to the marriage register in the native church as a still better proof of marriage, of the consent of the father-in-law and other relatives, and of the legitimacy of the children. The morality of mission stations was higher than that of the heathen towns; only cases of immorality were observable in the former, while unnoticed in the latter. There was no point to be made out in favour of the English as such or the Boers as such. The difference was one of education; the stock or race was one and the same. It was as if two sons of the same parents had chosen different courses—one remaining among educative and civilizing influences, while the other shouldered his rifle and went into the wilderness. It was quite true that so far as we knew there were not 200,000 people in Bechuanaland from the Cape Colony to the Zambesi. And yet in some parts of the country natives might suffer hardship through loss of their cultivated lands. But under wise administration and control it was certain that there was land in Bechuanaland not only for the natives but for a considerable

population of Europeans also; and the advantage to all parties would be very great if the English Government assumed the management and control of this wide area of unoccupied land. The question had just been put if it was absolutely indispensable that strong drink should be sold at Mankorane's town. He was not aware of any necessity for this. The Administrator was free to decide either for or against it. The law in the new colony on the whole was that of the Cape Colony. But there was no colonial law compelling the sale of liquor or the licensing of canteens, although such houses might be legalized under certain restrictions. It was not according to colonial practice to issue a licence to sell drink within a native town. In the Free State they had no canteen licences whatever. If nothing but ginger beer were for sale in Taung the missionary would not have attended the licensing court to protest against the issue of the licence, nor would the magistrate, the son of Dr. Moffat, have thought it necessary to explain that in this matter he had consulted the Administrator and that the licence to sell spirits in Taung was issued by the desire of the Administrator himself. At the same time he would not have them believe that the Bechuana were a drunken people, or that natives generally were dying out in South Africa. This was not so, from all the information which he could obtain. Although the natives had no large idols as in other countries, they had smaller fetiches which they wore or placed in their dwellings, and in which they trusted. They believed in the after-life of man, and were ancestor-worshippers.

Sir GEORGE CAMPBELL, and Mr. C. ROBERTS also joined in the discussion.

Captain CONDER, in answer to the questions raised in discussion spoke as follows:—The dances to which I alluded are not of certain antiquity; I do not think they have any discoverable astronomical origin. Both men and women moved round, not with, but against the sun. As regards the size of the chiefs (to which Mr. Morrison alluded) the chiefs are generally much stouter than other natives, chiefly, I suppose, because they are better fed. As regards the word Turanian, I wish to say that I used it in the present restricted sense as referring to the Altaic race which is certainly known to have existed in Babylonia as early at least as 2,500 B.C.

I am, of course, aware that the Bantu Hottentot races are quite distinct. It is possible that the tufted hair of some of the Bechuana may be due to an admixture of Hottentot blood.

The chief questions raised in discussion referred to trade, sparsity of population, drink and disease, and to the treatment of the Korannas by the Transvaal Boers. I think that there is a good deal of misapprehension in England on each of these questions which affect the future of the natives of Bechuanaland.

As regards trade, that of the natives has ceased entirely since the incursions of the filibusters from the Transvaal; and the Batlaping having been deprived of all their best lands are now not only without the means of carrying on such trade but even without the means of subsistence. The white trade with the interior was

almost entirely in the hands of Englishmen. This also has been much injured by the filibustering incursions, but may revive. That of the Batlaping natives is, however, quite ruined.

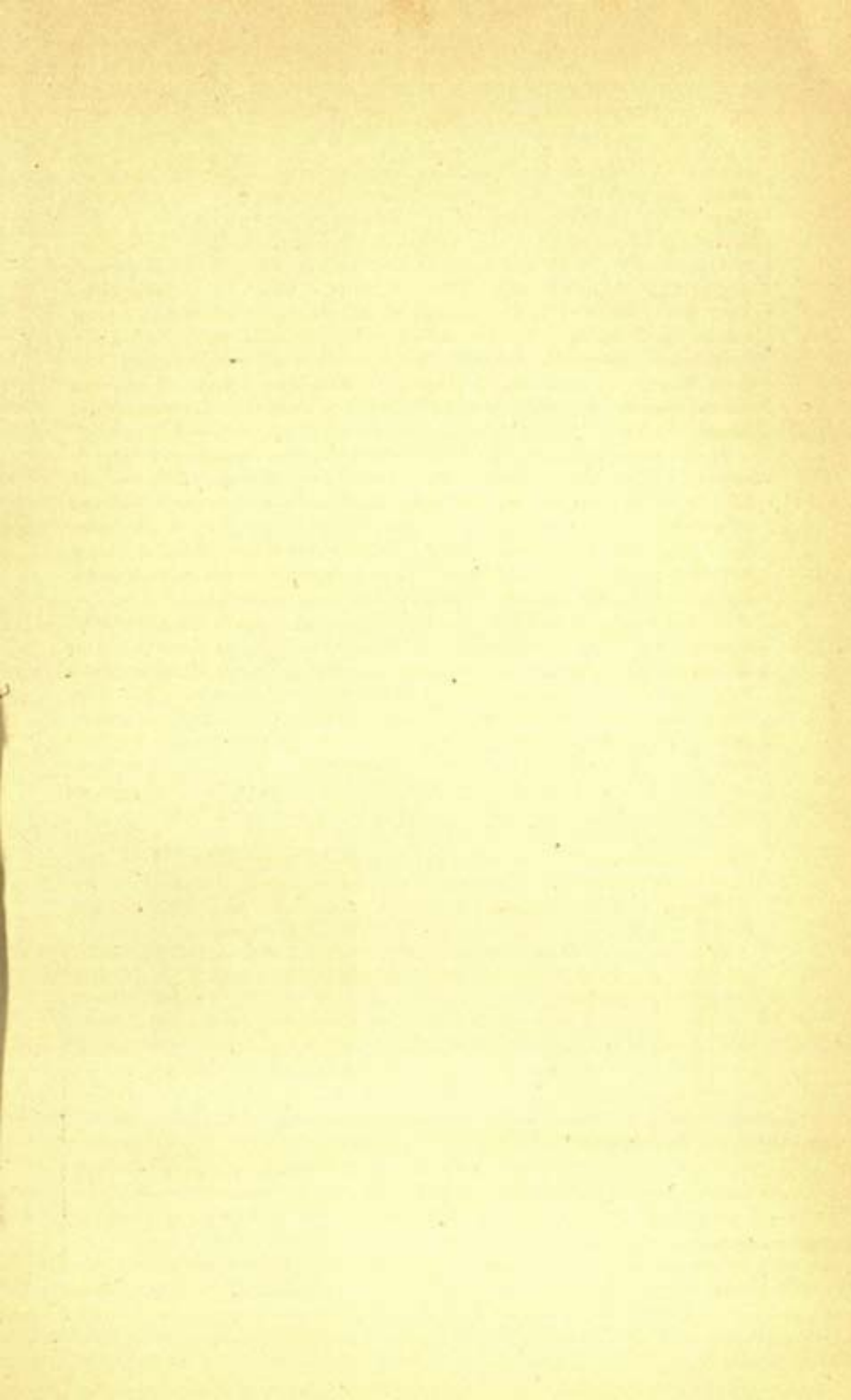
As regards sparsity of population the natives are collected in towns chiefly. There is much fertile land capable of cultivation if wells, cisterns, and water furrows were made. This the natives have never learned to do. There would be plenty of room for both whites and natives if the latter were allowed to retain their cultivated lands round the natural sources of water supply, but from many of their lands they have now been driven off and are over-crowded on the small remaining part of their original lands.

It is quite certain that Cape brandy is now being very largely consumed by the natives within the Crown colony. The rule of Montsiwa, Kama, and other chiefs was formerly so strong that the white traders did not dare to deal in spirits as they would have been expelled and would have lost all their other trade had they been found to deal in spirits. The drunkenness of the southern tribes is far more general than that among the northern.

The disease to which I referred (syphilis) is fearfully prevalent among the Mari Batlaping. It is also wide-spread among the Batlaping of Taung. In the north among the Barolong, it appears less general. It is generally attributed to the white people. The congenital diseases of the children appear to be such as would result from the parental syphilis, and these congenital diseases are said by old residents to be much increased. The climate is very healthy, and is specially recommended to consumptive Europeans so that the lung diseases do not seem to be due to climate.

The treatment of the Korannas by the Boers during the present year is notorious. This is, however, a political question. Moshette, the Barolong chief at Kunana, is said to be already marked out by the Boers as a victim, and the future treatment of this chief should be noticed by those who may feel interest in the question.

It was not my intention, however, to do more than refer to well-known facts in the recent history of the Bechuana in a paper of a scientific character.



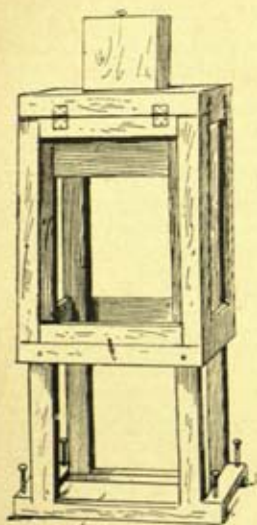


FIG. 1.

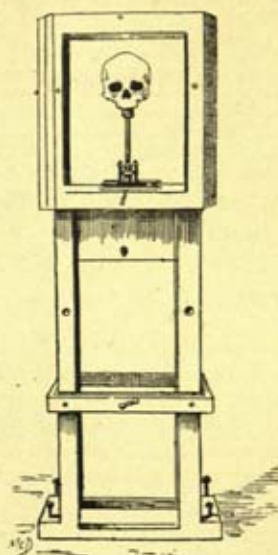


FIG. 2.



FIG. 3.

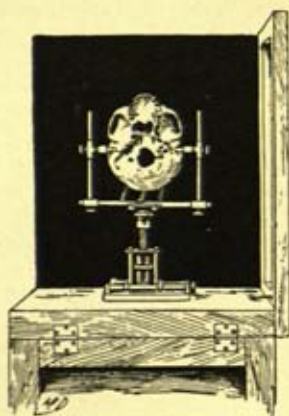


FIG. 4.

ANTHROPOLOGICAL MISCELLANEA.

On a New CRANIOPHORE for USE in TAKING COMPOSITE PHOTOGRAPHS of SKULLS.¹

By JOHN S. BILLINGS, M.D., U.S.A.

[WITH PLATE II.]

At the meeting of the National Academy of Sciences in April, 1885, I described an extemporized contrivance for taking composite photographs of skulls, and announced that the construction of a more convenient apparatus was in contemplation. Such an apparatus has since been constructed, under the direction of Dr. Washington Matthews, U.S.A., and has been employed by him in taking a number of composite photographs of crania.

The apparatus itself, of which figures are presented in Plate II., consists of an object stand, with four hinged frames, and a craniophore, with two different attachments for holding the skull.

The object stand (fig. 1) is of walnut, 3 feet 5 inches high. The top is 18 inches square and 2 inches thick, with a hole in the centre, through which the main screw of the craniophore descends. Four frames, bearing fine cross wires, are attached to the top by hinges in such a manner that they may be raised and lowered.

The craniophore (fig. 2) is of brass. It has a large screw, to elevate and depress the skulls. This screw is worked by means of a long tubular nut, fixed on a frame. The latter slides on two round bars, and is moved by a smaller screw, which works in nuts fixed to the bottom of the frame, and secures thereby lateral adjustment. On the summit of the screw is a ball and socket joint. In the top of the ball is a hole, or well, which receives the pin at the base of each attachment, and thereby holds the latter in place.

One attachment (fig. 3) is for supporting the skull, base downward, when the facial, lateral, and occipital views are taken. It has a cone, which enters the foramen magnum, and a jointed arm, elongated telescopically, which supports the palate.

The other attachment (fig. 4) is for holding the skull when the basal and vertical views are taken. It has two arms extending horizontally. On each of these is a vertical bar—moveable, in order

¹ This article is reproduced, by permission, from "The Photographic Times and American Photographer," of New York, for January 15, 1886; and the illustrations forming Plate II. have been obligingly contributed by the editor of that journal.

that skulls of different widths may be accommodated. On each vertical bar is a short horizontal, obtusely pointed bar, which fits into the auditory meatus, and moves freely on the vertical bar. These moveable parts are provided with binding screws. The horizontal bars are attached to a plate which slides on a frame; this arrangement secures the antero-posterior adjustment necessary to insure coincidence of the selected horizontal plane with the lateral vertical wires.

To operate: The skull is placed in the desired attachment; the latter is secured by the pin at its base to the ball in the joint. The joint is tightened by its screw to such a degree that it will move by gentle force, but not by the mere weight of the ill-poised skull. The frames are raised and maintained in their upright position by hooks fastened into eyes on the top of the table. The skull is adjusted on the four sets of cross wires. Then the anterior frame and the lateral frame next to the window are lowered; a black velvet background is hung on the posterior frame; a large white cardboard is hung on the frame further from the window; the brass-work is occluded with small velvet screens, and the picture is taken. When the work of the day is done all the frames are folded down, fastened by buttons to the legs of the table, to secure them from injury, and the craniophore is covered.

Explanation of Plate II.

Fig. 1. Object stand for the craniophore of Dr. Billings and Dr. Matthews.

„ 2. Craniophore on stand with the folding frames raised.

„ 3. Arrangement for supporting skull when photographs of the facial, lateral and occipital views are taken.

„ 4. Arrangement for supporting skull when photographs of the basal and vertical views are taken.

ON AMERICAN FAMILY PECULIARITIES *in the 18TH CENTURY.* By the
REV. JONATHAN BOUCHER.

The following extract from the unpublished autobiography of an observant and well informed settler in America upwards of a century ago, has been communicated to me by Mrs. Arthur Evans, of Oxford. It deserves publication on account of its intrinsic interest, and because it may induce American anthropologists to inquire how far those family peculiarities that were so evident to Jonathan Boucher, may through prepotency or perhaps in some rare cases through a continuance of family intermarriages show persistent traces down to the present day.

FRANCIS GALTON.

Extract from the AUTOBIOGRAPHY of the Rev. JONATHAN BOUCHER.
(Unpublished.)

"Americans, in general, I have thought eminently endowed with a knack of talking. They seem to be born orators. I remember a whole family (of the name of Winslow, in Hanover county) who were all distinguished as speakers; and so were the Lees, and many others. And there is this further peculiarity observable in those countries, that the first settlers having usually taken up large tracts of lands, these have since, from time to time, been divided among and allotted to their descendants in smaller portions; so that by this means, and by intermarrying, as is very much their custom, with one another, certain districts come to be settled by certain families and different places are there known and spoken of not as here, by any difference of dialect (for there is no dialect in all North America) but by their being inhabited by the Fitzhughs, the Randolphs, Washingtons, Careys, Grimes, or Thorntons. This circumstance used to furnish me with a scope for many remarks, such as do not so often occur here. The family character, both of body and mind may be traced through many generations, as for instance—every Fitzhugh has bad eyes, every Thornton hears badly, Winslows and Lees talk well, Carters are proud and imperious, and Taliaferros mean and avaricious, and Fowkes cruel."

Jonathan Boucher was born at Blencogo in Cumberland, March 1, 1738.

In 1759 he went to Port Royal, Virginia, where, as well as in Maryland, he held various livings until in the year 1775 he was forced to fly from America. He then held a curacy at Paddington, and finally the living of Epsom, where (I believe) he died.

See also *Gent. Mag.* June, 1804, and Chalmers *Biog. Dict.*, also "An American Loyalist," *Notes and Queries*, 3rd Series, ix., 75, 282; 5th Series, i., 102, v., 501, vi., 81, 141, 161.

ROMANO-BRITISH MOSAIC PAVEMENTS.

Those anthropologists who include archæology within the range of their studies may be glad to have their attention directed to a work on "Romano-British Mosaic Pavements," by Mr. Thomas Morgan, F.S.A., recently published by Messrs. Whiting and Co., of Sardinia Street, W.C. The author has not only collected within moderate compass the scattered notices of these interesting relics of ancient art, but has introduced into his work much original matter. The numerous tessellated pavements of Britain are described in topographical groups, county by county, beginning with the well-known example at Woodchester, in Gloucestershire, and ending with the fine pavements unearthed by Mr. J. E. Price

and Mr. F. G. H. Price at Morton, near Brading, in the Isle of Wight.

The mythological significance of many of the subjects represented in the mosaics of this country is discussed with much fulness. The popularity of mosaic decoration among the Romans became so great that in the time of Seneca he was considered a poor man who could not afford a tessellated floor. *Tesserae* and *sectilia* were imported into this country for the purpose of carrying on the manufacture. Glass, though occasionally introduced into our work, was but sparingly used, while in the African and Asiatic mosaics cubes of vitreous materials were largely employed.

Not the least attractive feature of Mr. Morgan's work is the series of admirable engravings by which it is illustrated. Many of these are exceptionally fine examples of colour-printing, the more notable being copies of the Woodchester, Bignor, and Morton pavements. Several mosaics from Asia Minor and North Africa, now in the British Museum, are also well illustrated.

An appendix to the work gives the text of the *Itinerary* of Antoninus, so far as regards Britain. This is accompanied by a map presenting a general view of the directions of the roads by which the Roman engineers connected the main ports and fortresses. Some of the finest specimens of mosaic, as might be expected, have been found along these roads, and it is likely that in their vicinity other mosaics may, in the course of time, be brought to light.

The most numerous examples of mosaic pavements have been furnished by the south-western counties. Mr. Morgan believes that remains of many mosaics may still exist beneath the early religious houses in this country. "The Roman pavements had, of course, to be done away with on account of the allusions on their face to the old mythological worship; but it is probable that if we were to dig beneath the old tithe-barns of the monasteries, which are often extensive and well preserved, we should find that they were not unfrequently built over mosaic pavements of old Roman times; for this reason, that the hypocaust below them, and their solid construction, rendered them impervious to damp, and therefore well adapted for granaries; and they seem to have been used as such in the middle ages, from the frequent remains of wheat found upon the surface of mosaics."

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

APRIL 13th, 1886.

Professor A. H. KEANE, B.A., *Vice-President, in the Chair.*

The Minutes of the last meeting were read and signed.

The election of ABRAHAM HALE, Esq., of Kinta, Perak, was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the AUTHOR.—History of Paganism in Caledonia. By Thomas A. Wise, M.D.

— On the origin of the Greek and Latin Languages. By N. A. Aykamebura.

— Über die Wirbelkörper-epiphysen und Wirbelkörpergelenke zwischen dem Epistropheus, Atlas und Occipitale der Säugthiere. By Prof. Dr. Paul Albrecht.

— Über die morphologische Bedeutung der Pharynxdivertikel. By Prof. Dr. Paul Albrecht.

— Sur la non-homologie des Poumons des Vertébrés pulmonés avec la vessie natatoire des Poissons. By Prof. Dr. Paul Albrecht.

— Zur Zwischenkieferfrage. By Prof. Dr. Paul Albrecht.

— Epiphyses entre l'occipital et le sphénoïde chez l'homme; Os trigone du pied chez l'homme; Epiphallux chez l'homme. By Prof. Dr. Paul Albrecht.

From the OXFORD UNIVERSITY PRESS.—The Melanesian Languages. By R. H. Codrington, D.D.

- From the U.S. GEOLOGICAL SURVEY.—Mineral Resources of the United States, 1883 and 1884. By Albert Williams, jun.
- From the REGISTRAR-GENERAL OF VICTORIA.—Patents and Patentees. Vol. XV.
- From the SOCIETÀ ITALIANA DI ANTROPOLOGIA.—Archivio per l'Antropologia e la Etnologia. Vol. XV. Fas. 3; Quadri Statistici.
- From the AKADEMIIJA UMIEJETNOSCI (KRAKOW).—Zbiór Wiadomości do Antropologii Krajowej. Tom. IX. Dodatek do Tom. IX.
- From the BERLIN GESELLSCHAFT FÜR ANTHROPOLOGIE. Zeitschrift für Ethnologie. 1885. Heft 6.
- From the ACADEMY.—Atti della Reale Accademia dei Lincei. Vol. II. Fas. 5, 6.
- From the CLUB.—Transactions of the Essex Field Club. Vol. IV. Part 1; Appendix to Vol. VI; Journal. Vol. IV. Part 1.
- From the PUBLISHER.—Essays in the study of Folk-Songs. By the Countess Evelyn Martinengo-Cesaresco.
- From the SOCIETY.—Proceedings of the Royal Society. Vol. XXXIX. No. 241.
- Proceedings of the Society of Antiquaries of Scotland. 1884-85.
- Proceedings of the American Philosophical Society. Vol. XXIII. No. 121.
- Bulletin de la Société d'Anthropologie de Paris. 1885. July to Dec.
- Bulletin de la Société de Borda, Dax. 1886. Part 1.
- Journal of the Society of Arts. Nos. 1740-1742.
- Annual Report of the Yorkshire Philosophical Society. 1885.
- From the EDITOR.—Nature. Nos. 856-858.
- Journal of Mental Science. 1886. April.
- L'Homme. 1886. No. 4.
- Revue d'Ethnographie. 1886. No. 1.
- Bullettino di Paletnologia Italiana. Tom. II. N. 1, 2.
- Science. Nos. 162, 163.
- American Antiquarian. Vol. VIII. No. 2.

The following paper was read by the author:—

On the ORIGIN of AGRICULTURE.

By H. LING ROTH, Esq.

Introduction.

At first sight it may appear strange that hitherto so little has been done to investigate the Origin or early days of Agriculture, for while almost every other branch of man's early history has been well studied, this branch alone seems to have been forgotten. The late Mr. Darwin, Mons. A. de Candolle, Dr. Pickering, Mons. N. Joly, Mr. E. B. Tylor, and Dr. Daniel Wilson have

certainly given the subject some attention, but they have hardly treated it from an anthropological point of view. One reason for the neglect of this study may lie in the general indifference, if not contempt, with which tillers of the soil are usually regarded. Indeed, history is full of the scorn with which manly or warlike races look down upon husbandry. Gibbon tells us that the agricultural class among the Huns was despised by its fellows ("Decline and Fall" III, xxvi, 152) and that the epithet of *Cruitnich* or wheat-eater, expressed the contempt or envy of the carnivorous Highlander (*ibid.*, III, xxv, 107). Sir A. H. Layard describes ("Nineveh and Babylon," abrid. ed., p. 131) how it is that the Shamar and Aneyza tribes have no cattle or sheep, "those animals being looked upon as the peculiar property of tribes who have forgotten their independence and degraded themselves by the cultivation of the soil." Mr. Eug. Schuyler ("Turkestan," I, p. 37) states that the Khirghiz look down with contempt on those engaged in agriculture. According to Herodotus (Thalia 22) the Icthyophagi showed their contempt for bread by alluding to it as dirt. And we have evidence to this day of the disdain with which an intelligent nation treat their peasantry (Jour. Stat. Soc., xlviii, 83). These facts may explain to a limited extent why travellers tell us so little about the cultivation of the soil amongst savages. The allusions to it in their journals are frequent enough; we are told that its state is good, bad or indifferent, but with regard to the details of the methods employed we are supplied with very scanty information. Yet a full knowledge of this peaceful art is quite as necessary for estimating the stage of progress at which a wild or semi-savage tribe has arrived, as are the minute particulars we get of their warfare and warlike preparations. The other cause of the neglect may lie in the fact that few of our anthropological students have anything to do with farming so that the fellow feeling, if we may so term it, called forth in other investigations, is here wanting.

At this late hour it is of course out of the question to attempt to describe definitely how agriculture originated, but we can at least form some satisfactory idea as to the manner in which early man became a tiller of the soil.

Before proceeding with our investigation, we will see what savages or semi-barbaric nations believe to have been the creators of agriculture, and then briefly summarise the theories held by learned men on the question.

Savage Views.

To ascertain the views or ideas of savages on this subject we cannot do better than to pick out from their numerous deities

those whose good or ill will affected in any way the cultivation of the soil. The Nahua nations had a god of cereals—Centeotl, and a goddess of provisions—Chicomencoatl, to whom they made offerings, and in whose honour they fasted once a year for four days (H. H. Bancroft, "Native Races of the Pacific States," New York, 1875, II, 317). The Mayas had innumerable agricultural gods, among whom were Chac and Yzama, the gods of the corn-fields (*ibid.*, 691) Ekchuah and others, the patron gods of the cocoa-planters, and Chichac Chob and others, the gods of plentiful harvests (*ibid.*, 701-3). But the great god or goddess of this part of the world was Centeotl—the goddess of agriculture in whose honour very great festivals were held (*ibid.*, III, p. 349). The Peruvians evidently regarded the Sun as a great god of agriculture (Lasso de la Vega, Roy. Com. Pt. 2, Bk. vii, p. 257). At his festival the Inca himself presided (Prescott "Hist. Conq. Peru," London, 1878, p. 63), and turned the soil in order to show what a worthy occupation that of the husbandman is. At Sennaar, James Bruce tells us ("Travels in Abyssinia," Nimmo's Pop. ed., p. 255), the king was obliged once a year with his own hand to plough and sow a piece of land. Evidently among these people and the Peruvians, agriculture was held in exceptional respect. The Finns are said to have been taught agriculture by Wainamoïnen, the son of the lord of the vault of air (A. Lang, "Custom and Myth," p. 163). The Lingga Dyaks have a good spirit, Pulang Ganah, who gives fertility to the earth, and "to him are addressed the offerings at the feasts given while preparing rice cultivation" (Spencer St. John, "Life in the Forests of the Far East," 1862, I, p. 60). They say rice was the gift of heaven, and describe how it came to be cultivated (*ibid.*, p. 202). Some of the African agricultural tribes offered pombé and sometimes a goat or a fowl to their crop-protecting idols (V. L. Cameron, "Across Africa," 1877, I, p. 330). The Rev. W. Ellis informs us that at Tahiti there was a god of agriculture, and he gives a circumstantial account of the mythical origin of the bread-fruit tree ("Polynesian Researches," 1831, 2nd Ed., I, p. 68), while from Mr. Im Thurn ("Among the Indians of Guiana," 1883, p. 252) we learn that the British Guiana Indians originally obtained cassava from heaven. According to Herodotus (Mel. 5) the Scythians believed they had obtained the plough from the same sphere. And Mr. E. B. Tylor mentions that Pheebee Yau, the Ceres of the Karens, "sits on a stump and watches the growing and ripening corn;" and that the Khonds worship "Bürbi Pennu, the goddess of vegetation, and Pidzu Pennu, the rain god. Among the Finns and Esths, it is the earth-mother who appropriately undertakes the task of bringing forth the fruits, &c., ("Primitive Culture," II, p. 278). The hill tribes of Goomsur and Boad have an earth

goddess to whom they offered living human sacrifices (John Campbell, "Personal Narrative of Thirteen Years' Service among the Wild Tribes of Khondistan," Lond., 1864, pp. 51 and 56). According to H. M. Stanley ("Through the Dark Continent," I, pp. 345-6) the Waganda appeared to have believed that their ancestor Kintu brought the art of agriculture with him when he entered and settled in the country. There is, in fact, no limit to the list of gods of agricultural peoples.

That all tribes or races who have made some progress in the art of cultivation of the soil should have imaged a deity or deities whom they worship for the sake of protection or aid in their labours was to have been expected. But the Scythians, Dyaks, Tahitians, Guiana Indians, and Peruvians, appear also to believe that their gods taught them or supplied them with a knowledge of the element of agriculture. This fact might be construed to mean that there exist traditions among these races, of heroes, who in past times taught their ancestors the art in question; in other words, that agriculture did not originate with them but was introduced. Unfortunately, as Sir J. Lubbock has pointed out ("Pre-historic Times," 1878, p. 437), tradition at best "is untrustworthy and shortlived."* So much then for savage explanation.

Modern Views.

We now come to contemporary views on the subject, held by men who have given this question their attention, or, who have otherwise studied the development of early man. Dr. Dan. Wilson, in the first edition of his "Pre-historic Man" (1862, II, p. 466), speaks of agriculture "following closely in the wake of the domestication of animals by pastoral man," and C. G. Anton ("Gesch. der Teutschen Landwirthschaft," Görlitz, 1799, pp. 10 and 11) seems to incline to a similar belief. As we have already seen, the pastoral tribes of the old world look upon agriculture with positive contempt. But perhaps we are not wrong in saying that the idea is generally entertained that the origin of agriculture is intimately connected with the domestication of animals. We cannot, however, find any evidence to warrant such a belief.

Mr. Bailey describes the tamed buffalo and dog in use by the Wild Veddahs ("Wild Tribes of the Veddahs of Ceylon,"

* In "The Trustworthiness of Early Tradition," by Brooke Herford (pp. 158-169, vol. lii, *Atlantic Monthly*, 1883), an attempt is made to prove that in pre-historic times traditions were most carefully handed down by men regularly employed in teaching younger members the songs of their forefathers. Amongst races who have attained a high state of civilisation without however attaining to the art of writing we may accept tradition as more or less correctly handed down to us, but our knowledge of savages certainly does not in any way lead us to conclude that their traditions are similarly to be relied upon.

Trans. Ethnol. Soc., 2nd Ser., II, pp. 286–288) but all accounts of the Village Veddahs (Knox, Tennent, Davy) are silent as to the domesticated animals of these semi-agricultural tribes. The ancient Peruvians domesticated the llamas but only to use them as beasts of burden and not as draught-cattle (Lasso de la Vega, *op. cit.*, Bk. 8, ch. xvi and xvii). The agricultural tribes of Brazil have tame birds in large quantities (A. R. Wallace, "Narrative of Trav. on the Amazons," 1853, p. 305), but according to Mr. H. W. Bates ("Naturalist on the River Amazons," 1863, I, 191) the Brazilian aborigines, even those who cultivated the soil had "no notion of domesticating animals for use." Most of the North American tribes seem to have had domesticated dogs; the inhabitants of Terra Florida (F. de Soto, Vol. ix, Hakluyt Soc., pp. 49, 56, 61) had domesticated dogs and fowls; and the Nahua nations domesticated several species of animals and birds (H. H. Bancroft *op. cit.*, II, 353). The Bushmen and Australians have also domesticated dogs (Darwin, "Variation Anim. and Plants under Domestication," 2nd Ed., I, p. 24). Indeed, excepting only the Andamans (E. H. Man, "Aborig. of Andaman Is." 1885), it is doubtful whether any savages have existed to our knowledge without having domesticated animals or birds of some sort. Sir John Lubbock ("Pre-historic Times," 1878, p. 600) considers it "most probable that the dog was long the only domesticated animal." He enumerates the uses to which the dog was put thus (*ibid.*, p. 571): "The Esquimaux forced him to draw the sledge; the Chinook kept him for the sake of his wool; the South Sea Islanders, having no game, bred the dog for food; the Chonos Indians taught him to fish [and to catch birds]" and so on. Here we have the earliest known domesticated animal put to a variety of uses by people who *are*, and by people who are *not* tillers of the soil. We have thus examples of early domestication of animals without a coeval husbandry, but no examples (as far as we can ascertain) of an early agriculture without a co-existent domestication of animals. It is therefore probable that while agriculture followed domestication there is no connection between the two arts. But their order of rotation indicates the steps of mental progress involved. The taming of an animal is quicker, and therefore easier, of accomplishment than the cultivation of a crop and it is therefore to have been expected that the domestication of animals should precede agriculture. In other words we may say that the agricultural state did not necessarily arise out of or succeed the pastoral state, but that the former is merely indicative of greater advance towards civilisation than the latter.

In his "Prehistoric Annals of Scotland" (Lond., 1863, I, 490),

Dr. Wilson says: "In every step of human progress tools have been the first requisite; and efficient implements are so indispensable for any extensive culture of the soil that we can have little hesitation in assigning the birth time of true agriculture to an early epoch in the period of the metallurgic arts." Is this so? Mr. T. Williams ("Fiji and the Fijians," I, p. 63) describes the Fijian plough as "a stick not larger or longer than the handle of an ordinary hay fork. The bark is kept on, except at the end which is used for digging, and which is tapered off on one side after the shape of a quill toothpick." In New Zealand where "the field rivals any in Europe," E. Dieffenbach ("Travels in New Zealand," II, 123) states that the land is "dug up with a pole, which has a foot piece firmly attached to it, and which is used in the same manner as our spade;" he adds, "sometimes a hoe is used, formed of Lydian or green stone fixed to a handle." Amongst the Nahua nations (Mexicans, etc.) three instruments were used in cultivating the soil: one "was a kind of oaken shovel or spade, in handling which both hands and feet were used," a second "was a copper implement with a wooden handle, used somewhat as a hoe, etc," but "a simple sharp stick, the point of which was hardened in the fire, or more rarely tipped with copper, was the implement in most common use" (H. H. Bancroft *op. cit.*, II, 248). Lastly, according to Lasso de la Vega (*op. cit.*, xlv, p. 8) the Peruvians had an implement or spade which was simply a sharp pointed stake, traversed by a horizontal piece and worked by six or eight men. These instruments were all efficient, that is to say, the natives carried out their work successfully, and by their means the agriculture in which the tillers were employed was already of a high standard. With the exception of the Nahuas, the nations using them were still deep in the stone age.

Monsieur Joly ("Man before Metals," 1883, p. 253) says: "In order to discover the first distinct traces of the culture of the fields, we must go back to the time of the builders of the lake cities of the neolithic age." Dr. Pickering ("Races of Man," 1851, ch. xix, Origin of Agric.) was more interested in throwing light on the question: *Where* did agriculture originate? a question generally considered to be of more importance than the one immediately before us, *How* did agriculture originate? He believed that agriculture had its origin on the tablelands of Mexico, Peru, Thibet and Abyssinia, apparently on account of the freedom from forest and the regular climate, for he says (p. 309), "Supposing a useful plant to be discovered, its cultivation would require a clearing which seems too complex an idea for a first suggestion. On the other hand, the aridity of most open countries precludes cultivation, unless with the aid of irrigation."

But it does not follow that the discovery of a useful plant should lead to its cultivation. Were this the case the men who planted could not be in the low state implied, and the cleaning of the land or a system of irrigation would not present difficulties.

Mr. E. B. Tylor (*"Anthropology,"* London, 1881, p. 214) does not consider agriculture an out-of-the-way invention; he believes that "the rudest savage, skilled as he is in the habits of the food plants he gathers, must know well enough that if seeds or roots are put in a proper place in the ground they will grow," and he considers that it is "rather from roving life, bad climate, or sheer idleness, that so many tribes gather what nature gives, but plant nothing." Undoubtedly, every savage knows the edible fruits and roots in his district, that they have their localities and seasons but from what we shall see of his mental inactivity it is to be doubted whether he ever thinks at all about the conditions of plant reproduction. The state we describe as his idleness has also much to do with his neglect of agriculture, but then to a certain extent, this defect is compensated for by the extra amount of labour he imposes on his woman. Perhaps we have misunderstood Mr. Tylor's meaning, but to speak of a bad climate is, if we may be permitted to say so, to use an unhappy term, its meaning being too relative to apply to the question before us. If a climate be so bad as to prevent the first growth of any edible plants, then, of course, man could not be expected to grow them, but we have here not to deal with impossible conditions, and we may take it for granted that wherever a plant is indigenous, the climate, however bad, would not prevent its cultivation. We hope also to show that in the early days of agriculture roving habits were not necessarily obstructive factors.

Mr. Darwin's theory (*"Variation of Animals and Plants, etc.,"* 2nd ed., 1885, I, pp. 326-7) may be condensed thus: "The savage inhabitants of each land having found out by many and hard trials what plants were useful . . . would after a time take the first step in cultivation by planting them near their usual abodes," and he quotes Livingstone and Du Chaillu as having seen wild fruit trees which had been planted by the Batokas and other savages. "The next step in cultivation, and this would require little forethought, would be to sow the seeds of useful plants," then "an unusually good variety of a native plant" being grown on the manured soil near the hovels "might attract the attention of some wise old savage; and he would transplant it, or sow its seed." Mr. Darwin considered that "transplanting any superior variety, or sowing its seeds, hardly implies more forethought than might be expected at an early and rude period

of civilisation," and he quotes as possible evidence in this direction the West Australian law mentioned by Sir George Grey "that no plant bearing seed is to be dug up after it has flowered" ("Journals of Exped. in N. and N.W. Australia," 1841, II, 292). The law mentioned by Sir George Grey loses considerable importance when read by the following statement of Mr. A. C. Gregory, the well-known explorer, in reference to that law amongst these same Australians: "A native discovering a *Zamia* fruit unripe will put his mark upon it, and no other native will touch this; the original finder of the fruit may rest perfectly certain that when it becomes ripe he has only to go and fetch it for himself" (see Appendix I). This would lead one to suppose that Grey's law was a local one in the early stages of the development of property rather than one intended to affect the general future welfare of the tribe.*

Monsieur A. De Candolle, judging by the Australians and Patagonians ("Orig. of Cultivated Plants," Lond., 1884, p. 2), says that the lowest savages do not entertain the idea of cultivating plants if they consider that the plants are not productive and easy to rear; he also considers as other necessary conditions "a not too rigorous climate; in hot countries, the moderate duration of drought; some degree of security and settlement; lastly, a pressing necessity, due to insufficient resources in fishing, hunting, or in the production of indigenous and nutritious plants."

Dr. Pritchard ("Researches into the Physical History of Mankind," vol. v., p. 301), agreeing with Mr. Gallatin, says that the art of agriculture "was not communicated to the Americans from the Old World. This opinion is based on the fact that maize, the staple of American agriculture, is indigenous to the New World, supported by the fact that the despotic system in vogue there was favourable to its origin.

The Conditions Necessary for a Predisposition to Cultivate the Soil.

When we examine the intricate conditions under which agriculture is carried on amongst us at the present day, it becomes

* The Lampongs, a settled agriculture race, have a similar method of marking wild dammar trees and thereby becoming owners thereof (H. O. Forbes, "Naturalist's Wanderings," Lond., 1886, p. 136), and of the wild hunting Kubus in Sumatra the same author tells us, "When traversing the forest, if one of them, on finding a bee-infested or a dammar-yielding tree, clear the brush around it, make one or two hacks in the bark, and repeat a form of spell, it is regarded by the others as his possession, which will be undisputed. This is the only property, if such it may be called, that they possess" (*ibid.*, p. 242).

Among the Abipones (Dobrizhoffer "Gesch. d. Abiponer," Vienna, 1783, vol. ii, p. 138) animals or birds caught, or fruit found, belonged to him who first caught or found them.

a matter of no small difficulty for us to imagine a period when man should have raised food from the soil without any of the, to us apparently essential, pre-suppositions having been complied with. With us, apart from the primary indispensability of a suitable climate and soil, we see that the farmer requires security from domestic and foreign foes, in other words a reliable government, a certain amount of capital and labour, freedom from animal pests, a fixed settlement and—that primary incentive to toil in civilisation—want. Eliminating capital and labour, we will proceed to ascertain how far these conditions are fulfilled among agricultural savages at the present day, and to what extent they were likely to have been fulfilled at the period when man discovered how to cultivate the soil, or when circumstances so developed themselves that man passed insensibly into the agricultural age. If we begin with the obstruction to cultivation caused by the ravages of animals and vegetable parasites and thieves, we find that some of these pests can be overcome, but that in the presence of others, man appears to be helpless. Caillée ("Travels through Central Africa," 1830, I, p. 308) calls attention to the fact that the Foulahs, an advanced nation of husbandmen, "bring their fowls with them into the fields to eat up the insects." E. Dieffenbach mentions that the Maories collected the caterpillars which destroyed their crops ("Travels in New Zealand," II, 124), and Captain Speke ("Journey of the Discovery of the Source of the Nile," p. 93) says that at Karague the natives in order to save themselves from starvation caused by the depredations of sparrows, "were obliged to grow a bitter corn which the birds disliked." On the other hand, there are pests which savages have not been able to overcome. Dr. H. Barth ("Travels and Disc. in N. and C. Africa," IV, 319 and 323) refers to the destructiveness of the black and red worms. On the Amazons (Mr. H. W. Bates, *op. cit.*, I, p. 128), the Saüba ants are so destructive that the inhabitants said "it was useless trying to grow anything thereabouts," and Mr. Thos. Belt ("The Naturalist in Nicaragua," 1873, p. 77) gives a similar account of the leaf-cutting ant at St. Domingo. Mice are also heavy tax-gatherers (Livingstone, "Second Journey," Lond., 1875, Pop. ed., p. 164). Rats and mice are so destructive to rice-fields that the Dyaks have to select new ground every four or five years (C. Bock, "Head Hunters of Borneo," p. 201). Neither is man free from the larger pests. At Ehetilla, Sir S. Baker ("Nile Tributaries of Abyssinia," new ed., 1880, p. 173) describes how the elephants destroyed the dhourra crops, and Capt. Cameron (*op. cit.*, I, p. 322) records that where a "large herd of elephants had passed, the scene of destruction was amazing." Finally Bradley

("Travel and Sport in Burmah, &c.," 1876, p. 123) tells how the rhinoceros, as well as elephants and buffalo, "often nearly ruin the villagers by breaking into the rice and maize fields," and he also mentions that tigers were in one district so destructive to human life as to drive the husbandmen to seek fresh quarters (p. 66).^{*} There is no end to examples of this class, and as these hindrances to agriculture still exist in semi-civilised and sparsely-populated countries, as well as, to a limited extent, with us at home, it is not unreasonable to infer that the efforts of man from the time of his earliest attempts to grow crops have been similarly obstructed.

We come then to the conditions of general absence of security to life and property from foreign foes. Throughout the early part of his narrative Captain Speke refers, page after page, to the ravages committed by the Watuta; Bates (*op. cit.*, II, p. 124) speaks of the destruction of the plantations of the Mundurucus by the Pararuates, and Capt. Bruce (*op. cit.*, p. 188) tells us how the Abyssinian agriculturists had been driven to the mountain tops. Livingstone describes ("First Exped.," Pop. ed., p. 36) how the agricultural Bakalahari were hunted south, and ("Second Journey," Pop. ed., p. 397) how the country was destroyed by the Ajawas. Mungo Park ("Travels in the Interior of Africa," ch. viii, p. 87) refers to the utter destruction caused by African wars, and Capt. Cameron (*op. cit.*, pp. 278-9) tells a similar story. Spencer St. John (*op. cit.*, II, p. 29) refers to the annihilation of agricultural districts by the Kayan head hunters. The pages of Dieffenbach's "Travels in New Zealand" give us similar pictures. In Fiji and Tahiti (Williams, *op. cit.*, pp. 43 *et. seq.*) matters were not much better. There is, in fact, hardly a book on travels in savage or barbarous countries which does not bear evidence of the destruction to agriculture by invading tribes, and yet, in spite of them all, agriculture has continued to progress. Indeed Mr. H. H. Johnston ("The Kilima-njaro Expedition," London, 1885, p. 405) gives us a graphic description of the manner in which a warlike race, the Masai, after turning the country into a wilderness, have almost, in spite of themselves, taken again to agriculture.

With regard to the protection afforded to private property as an inducement to cultivate the soil, this is a question which hardly affects our inquiry, for in early days it is doubtful whether there existed an individual right in agricultural produce. "Judging from the evidences in so many countries of the

^{*} In Java villages are also sometimes deserted by the inhabitants owing to tiger attacks, (see Arthur Adams, "Travels of a Naturalist in Japan and Manchuria," p. 49).

existence of village communities holding land in common," Sir John Lubbock ("Orig. of Civil," 4th ed., p. 456) concludes that "there seems strong reason to suppose that in the history of human progress the individual property in land was always preceded by a period in which moveable property alone was individual, while the land was common. It is difficult to imagine that since the land was common, that the produce was not likewise common." As evidence in this direction we may cite the case of the Australians who divide the spoil of the chase or the gin's vegetable collections without any reference to the individuals who obtained them. The North American Indians, the Peruvians, the Chittagong Hill Tribes, the Borneans, and the South Sea Islanders, all appear to have cultivated in common, and to have possessed common rights in the produce.

Then as to a settled abode. When we look into history we find nations were apparently ever given to wandering. After a while wanderings become restricted. The Khirghiz, ancient nomads, are now bound in the steppes by certain limits, beyond which they cannot roam without coming into collision with other hordes (E. Schuyler, *op. cit.*, I, p. 37); they have also fixed summer and winter quarters. Of the Kurdish tribes (the Kochas) Mr. A. H. Layard (*op. cit.*, p. 191) says they change encampments according to season; they go to high peaks in summer, and to the low grounds of Tigris and Zab in the winter. The Wahumba, a branch of the great Masai nation, move, according to Capt. V. L. Cameron (*op. cit.*, I, 121), "from place to place in search of pasture" for their cattle. Brough Smyth, in his work on "The Aborigines of Victoria" (Melbourne, I, p. 123) says "it is necessary for a tribe to move very frequently from place to place, always keeping within the boundaries of the country which it calls its own—now to the spot where eels can be taken, often to the feeding grounds of the Kangaroo," &c., &c., and Sir George Grey (*op. cit.*) in describing the roots eaten by the West Australians says, "some of these are in season in every period of the year, and the natives regulate their visits to the different districts accordingly." The Obongos (Du Chaillu, "A Journey to Ashango Land," 1867, 322-3) similarly wander in search of vegetable foods and wild animals. The Negritos, the supposed aborigines of the Philippines, have no fixed abodes "but shift from place to place within a circumference of four or five leagues" (Sir John Bowring, "A Journey to the Philippine Islands," 1859, p. 171). In Borneo we have the wandering Pakatau and Punau, who move to a new spot "when they have exhausted the jungle around of wild beasts and other food" (Spencer St. John, *op. cit.*, I, p. 45). To go to the New World, we find that the Abipones roam from one district to another accordingly as they

found their food (Dobrizhoffer, "Gesch. der Abiponer," Vienna, 1783, Vol. II, 139). The Nehannes spend the summer on the coast and the winter inland (H. H. Bancroft, *op. cit.*, I, p. 125). The Haidahs have temporary dwellings for the summer, besides permanent well-guarded villages (*ibid.*, p. 169), and the same may be said of the Nootkas (*ibid.*, p. 183). The aborigines of Florida were, according to De Vaca ("Hist. of America," W. Robertson, 1822, II, p. 386), great wanderers, and Capt. R. W. Coppinger says the Fuegians have seasonal changes of dwelling ("Cruise of the Alert," 1883, p. 195).

In all the above cases—and there is no end to them—the tribes wander either for the sake of food for themselves or for their flocks. We can understand their doing so well enough. But it astonishes us not a little to meet with tribes who cultivate the soil, and who if not exactly wanderers like the Fuegians and Australians, are at least wanting in what we call fixed settlements. J. Pallme ("Travels in Kordofan," 1844, p. 88) tells us that owing to the scarcity of water "there are certain districts in Kordofan, the agricultural population of which inhabit two different villages in the year," one in the wet season for cultivation, and one in the dry season to be near the wells, and Mr. H. M. Jenkins, F.G.S. (privately communicated) informs us that something very similar to this exists in Norway and Sweden to this day. The Coroades in the Brazils who cultivate the soil, "very commonly quit their abodes and settle where new fruits are ripening, or where the chase is more productive (Spix and Martius, "Travels in Brazil, II, pp. 248 and 257). Mr. Im Thurn (*op. cit.*, p. 252) refers to the periodical desertion of their fields by the Indians, and which movement he ascribes to superstition. According to D'Albertis ("New Guinea," Lond., 1880, I, p. 218) some of the natives of New Guinea on the death of the head of the family, forsake house and plantation and build a new house and prepare a new plantation some distance away from the old home. Some of the Maories were nomadic agriculturists (Dieffenbach, *op. cit.*, I, p. 120). The Ainos, we are told by Miss I. Bird ("Unbeaten Tracks in Japan," 1881, II, p. 62), are continually exhausting and clearing fresh land. The Dyaks do not desert their farms because the land is exhausted, but because it is less trouble to cut down fresh jungle than to eradicate the weeds which have sprung up after the padi has been gathered ("Sarawak," by H. Low, 1848, p. 231). Sir Emerson Tennent ("Ceylon," II, 443) states that "the Village Veddahs, who hold a position intermediate between the Rock-, or Wild-, and the Coast-Veddahs, are still migratory in their habits, removing their huts as facilities vary for cultivating a little corn and yams." Of the Chittagong hill tribes, Capt. T.

H. Lewin ("Hill Tribes of S. India," p. 40) tells us: "The site of the village is changed as often as the spots fit for cultivation in the vicinity are exhausted." The Tsawkoo Karens abandon both villages and plantations after three years' cultivation (A. R. McMahon, p. 279, "The Karens of the Golden Chersonese," London, 1876.) The Lepchas are nomadic agriculturists who remain as long as three years in the same locality (E. T. Dalton, "Descriptive Ethnology of Bengal," 1872, p. 101). The Juangs (*ibid.*, p. 154) "are still semi-nomadic in their habits, living together in villages during a portion of the year, but often changing the sites, and occupying huts in the midst of their patches of cultivation, whilst crops are on the ground." Finally, the Santals are so fond of the chase that "when through their own labour, the spread of cultivation has effected this denudation [of the forests] they select a new site, however prosperous they may have been in the old, and retire into the backwoods" (*ibid.*, p. 208).

There are more explanations than one of the continued existence of wandering habits among semi-agriculturists. The roving disposition may be due in part to the old customs of a passing state in which perhaps search for food and superstition in connection with death, on which occasion many tribes think it necessary to shift their quarters, may have much to do. But it is probably rare that cultivated land is deserted on account of its arriving at the state described as "exhausted," i.e. when crops can no longer be grown in consequence of the withdrawal, through too much cultivation, of their food constituents, for savages do not cultivate on such an intense system as to bring about that state of the soil. Indeed, Sir John Lawes (see Appendix IV) says well when he tells us that exhaustion means more particularly that weeds have choked the growing crop. In some parts of Sumatra it would appear that the alang-alang grass takes possession of the cultivated ground, and drives the Lampongs to clear forest land which does not give such good crops of rice as the other level lands (H. O. Forbes "Naturalist's Wanderings," p. 131). But there appears to us to be considerable justification for believing that savages may have searched for fresh lands when their soils have arrived at that condition which farmers express by stating that for particular crops the soil loses its productive power. This condition is due to unnatural causes brought about by cultivation, and which a brief reference to Darwin's "Variation of Animals and Plants under Domestication" (2nd ed., 1885) may help to explain. Darwin has pointed out that in natural selection the variation is for the benefit of the plant or animal undergoing change, whereas with

cases of selection by man the variation is brought about for man's benefit and not for that of the creature that man for the time being is tampering with, and that as a consequence a weakened constitution may attend such domestication (*op. cit.*, II, 232). This is the reason why at the present day crops of turnips or clover cannot be grown consecutively on the same land, a reason which is confirmed by the fact that agricultural chemists do not consider the unsuccessful continuous growth of these crops to be due to withdrawal of the proper food constituents. It may be objected, how is it then that wheat can be grown tolerably well continuously on the same soil? The answer is that wheat, having been cultivated so many thousand years—over 5000 at least (we are unable to trace the original wild species)—has, through time, to a considerable extent overcome this weakness, whilst the turnip, which has barely been an agricultural crop for two hundred years, has not yet had time to adapt itself in the same degree to altered circumstances as wheat has. To continue, Darwin was inclined to think that when cereals were first cultivated the ears and grain may have "increased quickly in size in the same manner as the roots of the wild carrot and parsnip are known to increase quickly in bulk under cultivation" (*op. cit.*, I, 338). Therefore, when cultivation had already become a fixed art, the crop cultivated improved in quality, but then came the weakened stage during which the more enlightened savage agriculturist, giving way also to old tradition, forsook the old soil and searched for new.*

We now come to a very potent factor, and one to which most people would ascribe the savage's first attempt at cultivating the soil—namely, want of food. We are so accustomed to look forward to the morrow that it becomes difficult for us to conceive the existence of a people who give it no thought. To us it seems strange that any man knowing he has no food for the next day should either devour the whole of his present stock or not take any other precaution towards securing the necessary supply until the necessity makes itself painfully apparent.

* The preference of the savage for forest as against prairie soil has different explanations. Sir John Lawes (Appendix IV) tells us that the prairie soil is the richer of the two. This would imply that the savage does not know how to make the best of his surrounding conditions. It may be so; but the preference has a very reasonable explanation. We must remember that the burning of dense forest, leaves the ground comparatively much cleaner than burned grass land, and whilst on the former, vines and undergrowth spring up slowly and do not at first obstruct the crop to any extent, on the latter the grass comes up thicker than before, and people unfurnished with the broad or more modern hoes cannot cope with it. The Dyak explanation previously referred to is therefore a good one.

Whatever may be our preconceived notions, we shall now see that savage man does not trouble about his to-morrow's meals, any more than does a beast of the field. Mr. E. M. Curr, who spent some twenty years in daily contact with native Australians, emphatically records his opinion ("Recollections of Squatting in Victoria," 1883, p. 262) as follows:—"It is a noteworthy fact connected with the Bangerang, and indeed, as far as I am aware, with the whole aboriginal population (notwithstanding what Captain Grey asserts to the contrary in connection with the blacks of West Australia) that as they neither sowed nor reaped, so they never abstained from eating the whole of any food they had got, with a view to the wants of the morrow. If anything was left for Tuesday, it was merely that they had been unable to consume it on the Monday. In this they were like the beasts of the forests. To-day they would feast—aye, gorge—no matter about the morrow. So also they never spared a young animal with a view to its growing bigger." Dr. Robertson (*op. cit.*, II, p. 97) quoting from Dr. Edward Bancroft, who visited Guiana at the close of the seventeenth century, says of the Indian, who then, as now, cultivated yams, "he is then least solicitous about supplying his wants when the means of satisfying them are most precarious and produced with the greatest difficulty." The testimony of a traveller two hundred years later proves that that Indian is still the same improvident being (Im Thurn, *op. cit.*, p. 253). De Vaca, who spent nine years among the savages of Florida, describes how these wanderers were always in want of sufficient food (Robertson, II, p. 386). Of the Hottentots, who had been taught something already by the missionaries, W. J. Burchell ("Travels in Interior of South Africa," 1822, I, p. 365) complains, "Some of the people cultivate a little corn, but so foolish and improvident are they, that as soon as the harvest is gathered in, they eat, I may almost say, night and day, till the little they have is devoured." He adds that they are always either in a state of feast or fast. Of the Bachapins he says (*ibid.*, i, p. 588), "that although agriculture is considered important, it is not carried far enough to put the natives in plenty, and they often suffer want." Speaking of an agricultural tribe of Arabs, James Hamilton ("Wanderings in North Africa," 1856, p. 115) bewails a similar want of foresight. In a description of the Columbians (H. H. Bancroft, *op. cit.*, I, 267) we are told, "Life with all these nations is but a struggle for food." Yet it was the missionaries who introduced agriculture among them, and the same author in an account of the wild tribes of Central America (*ibid.*, I, 722), tells us: "No regularity is observed in eating, but food is taken at any hour, and with voracity; nor will they take the trouble to procure

more, until the whole stock is consumed and hunger drives them from their hammocks. The Poyas and Guajiqueros seem to be the only tribes who have any idea of providing for the future." The New Mexicans (Apaches and others) making more or less pretensions to agriculture, seldom "raise a sufficient supply for the year's consumption (*ibid.*, I, 487)." Even the Mexicans were an improvident people and want was no stranger to them (*ibid.*, II, 347). Although agriculturists, the Malays, "as in all parts of the interior, have barely enough food for their own consumption" (C. Bock, *op. cit.*, 1881, p. 118). Major W. F. Butler ("The Great Lone Land," p. 362) reports on the half-breeds of Manitoba: "Even starvation, that most potent inducement to toil, seems powerless to promote habits of industry and agriculture;" he refers to the great privations these men undergo, and adds that *like the Indians*, "they refuse to credit the gradual extinction of the buffalo, and persist in still depending on that animal for food." Although the dying out of the bread-fruit trees with the Tahitians, their staff of life, was pointed out to the natives by the missionaries, the Rev. W. Ellis (*op. cit.*, I, p. 33) informs us that they could not be induced to plant fresh ones. Finally Livingstone, records how foolish the African tribes thought him when he occasionally deposited "date seeds in the soil" ("First Expedition," Pop. ed., 1875, p. 176).

On the other hand, we have a few instances where a minimum of forethought concerning food is exhibited. Mr. Darwin noticed (*op. cit.*, I, p. 327) "that the Fuegians when they find a stranded whale bury large portions in the sand." And we have the case of the Poyas and Guajiqueros already referred to. The Esquimaux store up large quantities of meat for winter's use, and the Wapato and other Hyperboreans (Bancroft, *op. cit.*, I, p. 234) to some extent, preserved nuts, berries, &c., also for winter's food. The Wild Veddahs were said to preserve flesh in honey in hollow trees hermetically sealed with clay (R. Knox, "An Historical Relation of Ceilon," 1681, p. 63.) Mr. Darwin (*op. cit.*, I, p. 325) quotes Sir Joseph Hooker and Sir Andrew Smith in order to show how savages occasionally suffer from famine, but there is no instance on record in which a savage race was driven to cultivation by want of food, nor are we likely to discover such an instance.

In a case of vegetable and fruit famine, when the otherwise neglected wild food begins to affect man and beast, savages commence to poach on their neighbours' grounds, and, being repulsed, take to eating the weaker members of their own tribe, as is done to this day in Australia. A succession of famines, or even a prolonged one, necessarily leaves more available food afterwards for the survivors and hence any lurking idea that

there exists a necessity to cultivate the ground would be successfully dissipated. Allowing that a savage, wiser than the rest, had an inkling that the cultivation of vegetable fruits might help to avoid disastrous dearth, it is very doubtful whether he would have the power to enforce his views, for, after all the chiefs of savage races such as the Australians, Fuegians and Bushmen, can exert little influence over their co-members beyond the enforcement of tribal customs. The question of a sudden introduction of agriculture can in our view be only connected with a state of comparatively high mental activity in the savage. It will, therefore, be useful to glance for a moment at his mental state.

In his detailed account of the life of the Fuegians ("Fitzroy's Journal of the Voyage of the Beagle," III, ch. xi, p. 239) Darwin says: "We can hardly put ourselves in the position of these savages to understand their actions," the difficulty being due partly to our want of knowledge of these people, and partly to the fact that they apparently cannot or do not reason. We are told of the Bushmen (W. J. Burchell, *op. cit.*, I, p. 365) "that whether capable of reflection or not, these individuals never exerted it," and Spix and Martius say, unfortunately the Indian is so unaccustomed to exercise his intellectual qualities that it is very difficult to obtain satisfactory information from him. As final and thoroughly reliable evidence regarding the inactivity of the savage intellect, we may accept the conclusions arrived at by Sir John Lubbock, in his introductory chapter to the "Origin of Civilisation." On page 7 he states, "Though savages always have a reason, such as it is, for what they do and what they believe, their reasons often are very absurd;" and on page 9, "Again, the mind of the savage, like that of a child, is easily fatigued, and he will then give random answers to spare himself the trouble of thought." Hence a savage mind is not likely to grasp the real position which would arise from cultivation of the soil, and which would be the inducement to turn to husbandry. So that if we allow that famine or forethought for food induced the savage to turn agriculturist we should be crediting him with a power of immediate adaptation to circumstances which he does not possess.

The Position of Women and their Connection with the Soil.

Amongst the rudest tribes we find a well defined division of labour between the sexes. The men do the hunting and fishing, and the women the cooking and the general work which goes under the name of drudgery. The women, being the weaker sex, are also terribly knocked about. Sir John Lubbock, in

summing up the evidence of travellers on the position of the women, says :—"Their wives, or dogs, as some of the Indians [of North America] call them, are indeed well treated as long as they do all the work and there is plenty to eat ; but throughout the continent, as indeed among all savages, the domestic drudgery falls to their lot, while the men hunt and make war, &c." ("Prehistoric Times," p. 562), and on page 582 he refers to "the harsh, not to say cruel treatment which is almost universal among savages." There are a few exceptions to this rule. The Veddahs appear to treat their women with some sort of decency, and the Maori women held a not unsatisfactory position (*ibid.*, p. 479). Mr. H. Hale says that the Caroline Islanders, known for their peaceable disposition, treated their women almost as equals ("United States Exploring Expedition," 1846, VI, pp. 72-3), and according to Serpa Pinto ("How I crossed Africa," I, p. 341), the Ambuellas treat their women with some consideration, but, he adds, that as a rule among other tribes the women are the most abject slaves of their husbands. Mr. H. O. Forbes (*op. cit.*, p. 400) bears witness to the miserable position of the women among the Aléfurus. However, the consensus of opinion regarding the bad treatment and the slave-like position of the women among savages is so clear that we need make no further quotation.

The chase, snaring, and fishing are undoubtedly more pleasant pastimes than digging up yams or diving for sea eggs. There is an important savage pastime which we must not omit to mention. The letting of blood and the watching of the wretched victim as it shivers out its existence are pleasures in which savages revel. We have had to deal with aboriginal Australians and South Sea Islanders in Queensland, and have caught them in the act of playing with their prey in a very much crueller manner than a cat plays with a mouse. We have further evidence of this love for blood in the tortures the North American Indians inflicted on their prisoners ; in the horrible religious rites of the Mexicans ; in the Dyak head hunting expeditions ; in the cannibal feasts of Haitians, Maories, Fijians and Tahitians, and in the blood-thirstiness which is met with in all parts of Africa. The men, being the stronger sex, reserve these pleasures to themselves, and to the women is thus left the work necessary to the welfare of the tribe, and in which, according to the men's notions, there is no fun. In one of his numerous works ("Onéota," Lond., 1845, p. 82) on the North American Indians, Mr. Schoolcraft says : "It is well known that corn planting and corn gathering, at least among all the still *uncolonised* tribes, are left entirely to the females and children, and a few superannuated old men" ; and, he adds, that this labour is not compulsory, but is looked

upon as a just equivalent for man's labour in the chase and defence. We would, however, be inclined to think that the men had very much the better part of the bargain. When a party or tribe of blacks on the coast range of Queensland shift camp, the men, women, and children spread out in a long line or semi-circle, driving all before them. No woman, excepting perhaps an old gin, will dare to throw her waddy at a started wallaby or kangaroo-rat, but she will call the attention of the nearest man or boy to its presence; and *vice versa* if a man pass an edible root, he will tell the woman next to him to dig it up. A man will pick berries to eat as he goes by, or climb a tree after an opossum, but when it comes to touching the soil, that is the woman's work. In other cases the women are sent out alone to gather vegetable food, while the men go out on the chase, or remain at their ease preparing for it, *i.e.*, repairing and making spears, &c.

As the women appear everywhere with the savage in his lowest known stage to be told off for all work in connection with the collection of vegetable food, it is more than probable that they rather than the men were the first to make tentatives towards acts which may be regarded as originating agriculture.

The First Step.

In speaking of the West Australians, Mr. A. C. Gregory explains that in digging up the wild yams, the natives "invariably re-insert the head of a yam, so as to be sure of a future crop, but beyond this they do absolutely nothing which may be regarded as a tentative in the direction of cultivating plants for their use" (*see Appendix II*). This step towards cultivation among savages is the earliest of which we have any knowledge, but it can hardly be considered to be the first step. How the women discovered that the yam heads alone would suffice for propagation is left open to conjecture. The heads might not have been so palatable as the full body of the yam, and to save themselves the trouble of carrying the whole to the camps the women probably left the cut off heads on the ground or in the holes, and these tops have then grown into good edible roots. For a considerable period, doubtless, the women would not take much notice of this fact, but (had not European immigration interfered) it is easy to imagine how to save themselves the further trouble of having to hunt for fresh yam fields, they would have poked the yam head into the holes, and later on kicked a little of the disturbed soil over them. Some of the Sakeys of the Malay Peninsula have arrived at this possible stage. They content themselves with poking the tubers of the

various vegetables consumed by them into soil which appears propitious without any previous preparation ("Perak et les Orang Sakeys," by B. de St. Pol Lias, Paris, 1883, p. 279). In this case cultivation, if one may so term it, has already become of some importance and the sort of the soil has become a consideration. These people have maize, which they do not appear to cultivate, and it is, of course—owing to maize being indigenous to America—of late introduction.

The first attempt or rather step towards the cultivation of grain may have arisen in a similar way to that of the West Australian yams. It is, however, probable that when man began to harvest and carry the crop to the camp many seeds were scattered on the track, and thus there would be some foundation for supposing that the cultivation of the edible grasses began near the home for the time being. The lowest form of the cultivation of seed-propagated crops is to be found among the Juangs (Dalton, *op. cit.*, p. 154), for with them the seed is "all thrown into the ground at once to come up as it can." But this stage of cultivation, crude as it is, records already considerable progress. In the harvesting of self-sown edible grasses, many of the seeds would be trodden slightly into the ground or covered with dust and being thus to a small extent preserved the ensuing crops would probably be improved ones, if not in quality at any rate in quantity. Later on the women might purposely cover up the seed or scratch it in with their digging sticks. And still later, as the Borneans do (Spencer St. John, *op. cit.*, I, p. 320) they would go a step further and put the seed in a hole made with a pointed stick, which act, in fact, amounts to dibbling. Further progress is exemplified by the Lepchas (Dalton, *op. cit.*, p. 101), who already scratch the upper layer of vegetable mould for the reception of the seed, and lastly real tillage is arrived at by digging the ground over, as we see it done by the Mandans with their hoes made of buffalo or elk shoulder blades (Geo. Catlin, "Illus. of the Manners and Customs of the North American Indians," 1866, II, p. 121). This development of the art of agriculture thus appears to proceed smoothly enough, but in practice it must have been an exceedingly slow one, for every progressive step, from the sole harvesting of the seed to its first rude sowing, means an advance in the mental powers of the savage adopting it. To this day some of the North and West Australians reap annually thousands of acres of panicum and grind it into meal (Gregory, *see* Appendix II), but they do not in any way cultivate this cereal. Dr. Ch. Pickering was astonished that "on the Sacramento River of California, where, by a singular approximation to the use of grain, minute seeds of grasses

and other plants constitute an article of food, the natives, nevertheless, have not advanced beyond gathering the spontaneous crop" ("Races of Men," p. 310). The Mongols of Ala-Shan rely for a very important portion of their sustenance on the sulhir grass (*Agriophyllum Gobicum*), which grows on the bare sand, and which Prezhevalsky ("Mongolia, the Tangut Country," &c., 1876, I, pp. 233-5) calls the gift of the desert, but it is not cultivated. We need not be astonished at those people in not cultivating edible grasses which are of such great importance to them, for we find even well advanced tribes and nations relying upon similar wild growing food. Some of the Maories largely consumed the amylaceous seed covers of the *Elacocarpus hinau* (Dieffenbach, *op. cit.*, I, p. 399) and although agriculturists, they did not cultivate the plant, and Dr. H. Barth (*loc. cit.*, III, 447), mentions that among the Bagirmi, a settled agricultural nation, "rice is not cultivated, but collected, in great quantities after the rains."

Again the first step towards tillage of the soil would much depend on the nature of the plant which is the subject of the first experiment, if one may so term it. "When portions of the stem or tubes of the taro (*Arum esculentum*), are thrown away by the side of streams, they naturalise themselves easily" (De Candolle, *op. cit.*, p. 73). Cocoa nuts, when strewn about strike root and thrive (Dr. Karl Scherzer, "Voyage of the Novara," II, ch. i, p. 31). And we think a curious light is thrown on the manner in which plants successively became cultivated, by the Guiana Indian's statement (recorded by Im Thurn, *op. cit.*, p. 252), that when cassava was originally given them they tried at first to grow it by sowing the seeds and planting the tubers, and only succeeded in its cultivation by discovering at last that cuttings must be stuck into the ground. From this account we may infer that these Indians had already cultivated plants propagated by their seed or their tubers.

The Rotation in which Plants became Cultivated and the Homes of Agriculture.

The foregoing naturally leads to the question: Did the cultivation of edible seed-yielding plants precede that of edible root-plants? or perhaps it would be better to ask: Were plants which are propagated by their seed domesticated before plants which are propagated by tubers, cuttings, or suckers? We may not be able to answer this question, but we can throw some light upon it. The Aztec's chief agricultural products were the cacao-tree, maize, the banana, and the aloe (W. H. Prescott, "Hist. of Conq. of Mexico," 1878, ch. v, p. 66). The two first were

propagated by the seed, the latter two by suckers. De Candolle (*op. cit.*, p. 310) says Prescott was misinformed about the banana which came from Southern Asia. The North American Indians appear to have cultivated maize only, but they also gathered what is called a white turnip (G. Catlin, *op. cit.*, I, p. 56). The Peruvians cultivated maize, a grain resembling rice, the banana, the aloe, cassava, the potatoe, &c. (Prescott, "Hist. of Conq. of Peru," 1878, ch. iv, pp. 66-68), or in other words, plants propagated by seeds, suckers, cuttings and tubers, but not by sets. The British Guiana Indians (Im Thurn, p. 251) cultivate a large variety of plants; they appear to lack maize, but they possess other plants propagated by seed, such as tobacco. The aborigines on the Amazon (A. R. Wallace, *op. cit.*, 1853, p. 483) cultivated a similar variety of plants. According to Spix and Martius (*op. cit.*, II, p. 257) the Coroados had plantations of maize, mandioca, beans, etc.

De Candolle (*op. cit.*, pp. 380-382) considers sorghum to have its home in Africa, and to this day, where maize, wheat, or rice have not penetrated, sorghum continues to be the staple cultivated vegetable food of the Africans. We have not been able to ascertain that the aborigines of Africa ever cultivated any esculents but those propagated by seed.

Until the introduction of the potato, the Indo-Europeans seem to have contented themselves chiefly with cereals. But the Singhalese and Chinese, besides rice, must also have cultivated the yam, since that vegetable is supposed to have come originally from either of their homes (De Candolle, *op. cit.*, p. 438).

In the South Seas we have the Fijians who cultivate yams, sweet potatoes, taro (*Arum esculentum*) qai or masawe (*Dracæna terminalis*), the banana and plantain, the bread-fruit tree, and the sugar cane (Th. Williams, *op. cit.*, I, pp. 60-63), none of which are grown from the seed. Maize, tobacco, and the papaw were of course late introductions. The chief articles of vegetable diet of the Tahitians were the bread-fruit tree, the taro, the yam (*Dioscoria alata*), the sweet potato, and other roots (W. Ellis, *op. cit.*, I, pp. 41-47), and the cocoa-nut. The Maories' original vegetable foods consisted of taro, fern-root (*Pteris esculenta*), the vegetable berries of the *Dacrydium excelsum*, the pulp of a fern-tree (*Cyathea medullaris*), the sweet root of the *Dracæna indivisa*, &c. (Dieffenbach, *op. cit.*, II, p. 18), but travellers do not appear to have reported whether the natives cultivated any of the above except the taro and *Dracæna*. Mr. Thos. West ("Ten Years in South-Central Polynesia," 1865, ch. vi) gives some valuable information regarding the agriculture of the Friendly Islanders, whose cultivated plants resemble those of

the Tahitians. Thus, with the exception of the cocoa-nut, the South Sea Islanders appear to be wanting in esculents which are propagated by the seed, a fact which inclines to the supposition that in this part of the world agriculture had an independent origin.

For similar reasons we may infer that America, Africa and Asia-Europe were the original homes of separate systems of an indigenous agriculture, based on the manner of propagation of the various plants referred to.

To see how far and in what way a knowledge of agriculture may have spread, we must, for a moment, turn to the relations which existed, or which still exist, among independent savage races.

The Spread of Agriculture.

We are told that when Columbus landed at Cuba "all the inhabitants fled as he approached the shore" (W. Robertson, *op. cit.*, I, p. 129); the same at Hayti, where the inhabitants fled in great consternation towards the woods (*ibid.*, I, 132). At Dominica, Marigalante, Guadeloupe, Antigua, Puerto Rico, and several other islands, the Spaniards "never landed without meeting such a reception as discovered the martial and daring spirit of the natives" (*ibid.*, I, 157). When Juan Ponce de Leon tried to land in Florida he was vigorously opposed (*ibid.*, I, p. 272), and Juan Diaz de Solis lost his life in making a descent on Rio de la Plata (*ibid.*, I, p. 292). When Cordova discovered Yucatan he endeavoured by small presents to gain the goodwill of the people. The people invited him with every appearance of cordiality, but they set an ambush and attempted to destroy him and his followers (*ibid.*, I, 328). On the river Potonchan, near Campeachy, he and his sailors were attacked by the natives and almost completely annihilated (*ibid.*, I, 330). Captains Behring and Tschirikov on their voyages of discovery in the year 1741 both touched separately on the north-west coast of California, "each set some of his people ashore; but in one place the inhabitants fled as the Russians approached, in another they carried off those who landed and destroyed the boats" (*ibid.*, II, p. 40). To come to other more uncivilised portions of the world, we find that in Ceylon the Veddahs are to this day averse to meeting with strangers (Sir E. Tennent, "Ceylon," II, p. 437). When Chatham Island was first discovered by Broughton (Capt. G. Vancouver's "Voyage of Discoveries," 1798, Vol. I), the natives behaved treacherously, and Capt. Fitzroy remarks on the treachery of the Fijians (*op. cit.*, II, ch. xxiii, pp. 560-561) quoting La Perouse on this subject, with whom he evidently agrees. The Andaman Islanders are noted for their hostility to strangers (E. H. Man, *op. cit.*). Tasman was driven

away by the Maories in 1642 ("An Account of several late Voyages and Discoveries," London, 1694, pp. 134-5 and 141), and he mentions that when, twenty-seven years previously, Capt. W. Schouten discovered Moa, that navigator was similarly attacked. In the records of Australian discovery it is the same as in America, the natives run away or fight. J. M. Stuart, who made five important expeditions into the interior (during one of which he succeeded in crossing the continent), met with the natives forty-four times, yet owing to fear on their part he was able to communicate with them only thirteen times; on thirteen other occasions they were hostile, and in July, 1860, they compelled his expedition to return (*see* Appendix I). Mr. A. C. Gregory gives the following account (*see* Appendix II) of the position Australians take up where strangers are concerned: "Natives will occasionally attack whites without any provocation. Once the party was attacked in a part of the interior of the west coast where previously no European could possibly have penetrated, and after the fight the natives acknowledged that they had seen some bacon fat in the camp which they wished to possess, and that they would not have made an attack had they deemed the Europeans so powerful. As the whites push out, however, the pioneers being often men of reckless character, troubles with the gins (females) and retaliation by means of a night surprise, are more often the cause of native attacks than otherwise; but even when all acts of offence have been avoided by the whites, the aggressive character of the aboriginals has always led to war between the diverse races." Im Thurn, in classifying the Indians of British Guiana, refers to "the degree of mutual hostility between the various groups" (*op. cit.*, p. 162), and says though every group ignores all others as far as it can, and, when perforce it must meet others, regards these as hostile, yet this feeling of aversion is greater between the tribes of different branches—for example, between true Caribs and Arawaks—than between two of the same branch—for example, Macusis and Arecunas. Bock (*op. cit.*, p. 76) refers to the voluntary isolation in which the Poonans live. All this would tend to show that savages are, as a rule, averse to meeting foreigners of whatever nation or of whatever stage of civilisation. Concerning the general state of warfare in which savages live, we have already spoken. On the other hand, we have a few instances on record where savages have treated strangers in a truly friendly spirit; thus the Pelew islanders succoured Captain Wilson and his party (G. Keate, "Narrative of the Shipwreck of the 'Antelope,'" London, 1796) and the Fuegians behaved more than humanely to the crew of the lost "Wager" (Byron's "Loss of the 'Wager,'" London, 1751).

Whether this active or passive hostility on the part of savages towards strangers is due to some unexplained ideas bearing on self preservation is immaterial to our enquiry. We have only to deal with its effect, an effect which is necessarily a great bar to progress, as exemplified by the exchange of ideas and commodities, and, in so far as it interests us at present, to the spread of agriculture.

It may be objected that exogamy and slavery to a very great extent neutralise the effect of the isolation brought about by the fear of strangers. In his highly interesting work on "Custom and Myth" (Lond., 1884), Mr. Andrew Lang concludes that the transmission of myth would be aided by slavery and exogamy (p. 24) and he points out (p. 102) that the diffusion of tales is undoubtedly due to exogamy. It has, however, yet to be seen whether man in a low state keeps a slave long enough for the prisoner either to learn the new language or to communicate his own and whether, indeed, apart from keeping females for wives, any slaves are made at all. According to Spix and Martius (*op. cit.*, p. 508), the roving Macus attack the settled Indians to kill and eat them. Amongst the Fuegians, after an encounter "those who are vanquished and taken, if not already dead, are killed and eaten by the conquerors" ("Prehistoric Times," p. 554). The Kukis (Dalton, *op. cit.*, p. 44) in their wars spared only the children whom they adopted and the savage Kayans of Borneo ("Primitive Culture," i, p. 414) make slaves in order to kill them at funerals. As Mr. Tylor aptly remarks, their system is "a great impediment to an intercourse with them." The Tring Dyaks also make captures partly "for slavery and ultimate death by torture" (Bock, *op. cit.*, p. 218). The Australians never make slaves of captives, they eat them or destroy them for the sake of their kidney fat. The Bushmen of South Africa apparently make no slaves. The Koniagas, classed by Bancroft as wild, held only women in thralldom: "The male prisoners of war they either killed immediately or reserved for torture" (*op. cit.*, I, p. 80). The Thlinkets had slaves and although not agriculturists were well advanced in the arts (*ibid.*, I, p. 107). The Tacullis had slaves (*ibid.*, I, p. 124) but they were also great traders. The same may be said of the Columbians (*ibid.*, p. 168). Amongst some tribes of Californians slavery "in any form is rare" (*ibid.*, I, p. 338) and amongst others doubtful. The New Mexicans, who were incipient agriculturists, had slaves (*ibid.*, I, pp. 489, 501, 510). The Chinooks held slaves without being agriculturists, but according to Pickering (*op. cit.*, p. 18) they showed "greater advance in the arts over the hunting tribes of North America." The Hawaiians (W. Ellis, *op. cit.*, IV, p. 161), the Tahitians (*ibid.*, III, p. 95) and the Maories (*ibid.*, III, p. 343) all made slaves for the

purpose of obtaining aid to till the soil, the last-named requiring them also for their feasts. Commander J. E. Erskine ("Journ. of a Cruise Western Pacific," 1853, p. 182) refers to the fact that the Fijians will not sacrifice their slaves, if others for sacrifice are obtainable, as these islanders are careful agriculturists (*ibid.*, p. 171). Hence we conclude that savages in the lowest known scale make no slaves, but eat or sacrifice their captives, that tribes who have made some advance in the arts, even without becoming husbandmen, commence to make slaves of prisoners of war, and that agricultural tribes make slavery an institution.

We have seen how savages treat their women. It is not to be expected that they would treat their slaves any better, although there were exceptions, as for example, the New Mexicans, who appear to have treated their prisoners well (H. H. Bancroft, I, p. 510). Nor is it likely that men in the unhappy position of a slave to a savage would wittingly teach their masters new methods in the arts. On the contrary, the dissemination of anecdote, myth, &c., is explicable on the ground of the pleasure it gives captives to recount the exploits of their favourite heroes, or to sing their praises of and to worship their own fetiches, &c. Unwittingly, slaves could spread information by performing their tasks their own way, but, considering the contempt in which a slave's doings are held, it is not likely that the owners would profit thereby, even supposing the newly introduced method were an improved one. So while it is not likely that agriculture was spread by means of slavery, the children may have picked up the slave's romances.

With regard to the influence of exogamy on the spread of agriculture, the conditions are very different. Notwithstanding the numerous examples of doing work differently which are constantly before the eyes of a captive woman's child, the mother's influence must make considerable impression on the female children, and if the mother belong to an agricultural tribe some of her knowledge of cultivation may pass to her girls. But this is not the only way in which such applied knowledge would spread. Accustomed to a certain routine, the newly captive wife might, as a matter of course, commence to till the ground or sow the seed in her new quarters, of course after her own fashion. From what we have shown above it is probable that exogamy preceded slavery, consequently a man would be able to trust his woman and would not be in continual expectation of her running away as in the case of a slave. Having some knowledge of the habits of her tribe, he might command her to procure for him the vegetables she was in the habit of obtaining for her tribe in her original home. It is, therefore, far from unlikely for the

spread of agriculture to be due to the system of wife-capture. Indeed, in North America we have all the elements for the spread of agriculture by this means. Exogamy was almost universal amongst the Indians, and amongst them we find agricultural and hunting tribes living side by side while agriculture was in every stage of development.

The Development of Digging Implements.

When savages commenced to advance beyond the stage of dibbling and required to loosen the soil in some way the simple digging stick became an inefficient implement. Soil can be broken up or pulverised in three ways. It is accomplished in one method by pegging away at the soil with a simple pointed stick in a vertical up and down motion; another method is to drive a stick into the ground obliquely and to raise the soil by leverage; the third method is to drag a sharp tool over the surface of the soil. The two latter methods are probably merely developments of the first.

The first system can be seen in operation to this day in the greater part of Australia, and is described by Sir Geo. Grey, who says the natives "carry a long pointed stick, which is held in the right hand, and driven firmly into the ground, where it is shaken so as to loosen the earth, which is scooped up and thrown out with the fingers of the left hand" (*op. cit.*, II, p. 292). The natives of Tanna (New Hebrides) dig up the soil in the same way, but instead of using the right hand only, two men work it with both hands. So also the Tahitians, before the advent of Europeans, appear to have used a plain point-hardened stick in the same fashion (W. Ellis, *op. cit.*, I, pp. 138-9). The digging stick itself used in this manner seems incapable of development.

The second method, that of digging as we understand it, was, until lately, the one pursued by the Fijians. The tool used is the digging stick with the digging end "tapered off on one side after the shape of a quill toothpick. . . . When preparing a piece of ground for yams, a number of men are employed, divided into groups of three or four. Each man being furnished with a digging stick, they drive them into the ground so as to enclose a circle of about two feet in diameter. When by repeated strokes the sticks reach the depth of eighteen inches, they are used as levers, and the mass of soil between them is thus loosened and raised. Two or three lads follow with short sticks, and break the clods, &c." (T. Williams, *op. cit.*, I, pp. 63-4). D'Alberty describes a similar mode of preparing the soil in New Guinea, but in this case the men stand in a row (*op. cit.*, p. 325). It is also like the method described by Lieut. Kittoe to have been in

vogue in Orissa in 1838, excepting only that with the tribes there the men worked independently of each other (John Campbell, *op. cit.*, p. 7). In one direction this method leads to the development of the spade which is to be seen in an intermediate form amongst the Maories. Thus Dieffenbach says of New Zealand, the land "is dug with a pole, which has a foot piece firmly attached to it and which is used in the same manner as our spade" (*op. cit.*, II, pp. 123-4). In the other direction this method has probably led to the makeshift plough of Chiloe, described as follows by Capt. Fitzroy: "Two poles of hard wood (*luma*) about three yards long and proportionately large, trimmed to a sharp point at one end and rounded at the other, are held by the middle, one in each hand, and pointed very obliquely in the ground; in this direction they are forced forward, by pressing against the blunt end with the abdomen, which is defended by a sheepskin, suspended in the form of an apron. After these have penetrated twelve or fourteen inches in the soil, a second person, generally a woman or a boy, places a stout stick under the poles, 'or *lumas*,' as they are called, close to the earth to form a solid support for them. The large ends are then forced down, the ground turned up, and the *lumas* pushed forward again, while the woman uses her stick to turn the clods over, to the right and left alternately. These clods are afterwards broken up by a wooden tool in the shape of a pickaxe . . ." (*op. cit.*, I. 286).

The third or dragging method, that of the plough, originated from the hoe (E. B. Tylor, "Origin of the Plough," *Journ. Anthropol. Inst.*, x, 77), which, according to Mr. Tylor, is a development of the implement known as the Swedish hack. This hack is probably the ancestor of a variety of instruments, among which are the plough, the hatchet, and the adze, the two last-named being the same implement with their blades set in different planes. Indeed, Mr. Tylor has called attention to a Kafir axe, with a moveable blade, so that the implement is at times an axe, and at others an adze. George Keate (*op. cit.*, p. 312) and Spencer St. John (*op. cit.*, I. p. 74), call our attention to similar implements in use in different parts of the savage world. But the development of the hoes is manifold. Major Serpa Pinto gives illustrations (*op. cit.*, I, pp. 129 and 161) of hoes in use in Bihé, which have two handles both in the same *vertical* plane and Dr. Livingstone ("First Expedition," Pop. ed., 1875, p. 275) describes a two handled hoe, in which the handles are both in the same *horizontal* plane, and which hoe is "worked with a sort of dragging motion." Mr. Tylor has so well described the development of the plough, that we need not go over the same ground, but shall call attention to an error of Mr. Prescott's in the description given

of the tilling implement of the ancient Peruvians. This implement Mr. Prescott called a plough and mis-translated ("History of Conq. of Peru," London, 1878, p. 65) as a spade drawn through the ground. As Mr. Tylor has already pointed out, and as we have shown above, the action of the spade is out of the line of the development of the plough. But Mr. Clements Markham, in translating the same passage from Lasso de la Vega's "Royal Commentaries of Peru" (Hakluyt Society, vol. xlv, p. 8), shows the implement to have been a long-handled, deep, narrow spade, worked by several men.

In the foregoing pages we have attempted to explain how the Art of Agriculture may have arisen. We are aware that certain links in the chain of evidence are somewhat weak, and if we have not succeeded in dealing with this question as completely as we could have desired, we shall be satisfied if our endeavours should lead to more interest being taken in a subject which hitherto has been much overlooked.

APPENDIX I.

The Journals of John McDouall Stuart. Edited by W. Hardman, London, 1865.

Extracts showing the number of times Stuart and his party in their five Australian expeditions actually came in contact with the natives:—

June 25, 1858	The natives would not approach.
April 26, 1859	Much frightened.
" 29, "	Stole a blanket.
May 11, "	Would not approach.
" 13, "	Frightened, but friendly.
June 26, "	" "
Nov. 16, "	Took to flight.
Dec. 17, "	" and remained watching.
April 6, 1860	Took to flight.
May 22, "	" "
June 13, "	Hostile.
" 23, "	Friendly.
" 26, "	Drove back the expedition.
July 17, "	Took to flight.
Feb. 14, 1861	Set fire to grass to drive expedition back.
Mar. 6, "	Afraid but plucky.
April 20, "	Would not approach.
May 26, "	Attack.
Aug. 23, "	Set fire to grass to drive expedition back.
May 13, 1862	" "
June 26, "	Followed and set fire to grass.

July	1, 1862	Afraid but friendly.
"	2, "	" "
"	3, "	Ran away.
Aug.	3, "	Bold and doubtful.
"	4, "	Set fire to grass.
"	6, "	Followed and set fire to grass.
"	8, "	Set fire to grass.
"	12, "	Took to flight.
"	13, "	One black begged for fish-hooks.
"	15, "	Friendly.
"	25, "	Set fire to grass.
"	30, "	Followed at safe distance.
"	" "	Two blacks friendly.
Sept.	6, "	Set fire to grass.
"	13, "	Afraid, but approached.
"	15, "	Armed and doubtful, and afraid of horse.
"	29, "	Took to flight.
Oct.	2, "	Set fire to grass.
"	3, "	Took to flight.
"	5, "	" "
"	10, "	Tried to frighten expedition by incantations in order to get at water-hole.
"	12, "	Afraid but inquisitive.
"	25, "	Took to flight.

The tracks and other signs of the presence of natives were daily visible, but of forty-four opportunities for intercourse with the natives, the expedition were only able practically to communicate thirteen times.

APPENDIX II.

Memoranda on the Aborigines of Australia.

By A. C. Gregory, Esq.

[About the year 1882, I interviewed Mr. A. C. Gregory, C.M.G., etc., the well-known explorer. He was kind enough, not only to allow me to take notes of the information he imparted, but also to correct them afterwards. The MSS. of these notes have been handed to the Council of the Anthropological Institute in whose possession they now are. H. L. R.]

"The natives on the West Coast of Australia are in the habit amongst other things of digging up yams as a portion of their means of subsistence; the yams are called 'ajuca' in the north and 'wirang' in the south. In digging up these yams they invariably re-insert the head of the yams so as to be sure of a future crop, but beyond this they do absolutely nothing which may be regarded as a tentative in the direction of cultivating plants for their use. They are not destructive—that is to say, they do not destroy for destruction's sake—but only to obtain necessities; they often, however, in their battues destroy very much more game than they can consume. A native discovering a *Zamia* fruit unripe will put his mark upon it and no other native will touch this; the

original finder of the fruit may rest perfectly certain that when it becomes ripe he has only to go and fetch it for himself.

"There appears to be a tacit understanding that except on invitation no tribe should infringe on the lands of its neighbouring tribe and also that no individual of a tribe should hunt on the lands belonging to others of the same tribe without consent, although young men frequently infringe upon this law. Each tribe has its own district in which it reigns supreme; such district is again subdivided into portions belonging to the individuals of that tribe, the children inherit and females share equally with the males in the distribution of landed property.

"On Cooper's Creek, the natives reap a *Panicum* grass. Fields of 1,000 acres are there met with growing this cereal. The natives cut it down by means of stone knives, cutting down the stalk half way, beat out the seed, leaving the straw which is often met with in large heaps; they winnow by tossing seed and husk in the air, the wind carrying away the husks. The grinding into meal is done by means of two stones—a large irregular slab and a small cannon-ball-like one; the seed is laid on the former and ground, sometimes dry and at others with water into a meal. On the Victoria River and the west coast this grass is not found in such large quantities as in the interior.

"The natives know when the rainy season is about to set in by the constellations; they have an astronomical mythology, something like that of the ancients, each star being the abode of some great man amongst them, who was more or less distinguished in the past, and of some animal or bird. On the west coast they know the approach of the wet season when the star Sirius is near the meridian early in the evening—the months of May, June, and July being their wet season. They can foretell tolerably accurately also at other seasons the approach of rain or storms by the prevailing winds and the form of the clouds, but much of this naturally depends on the locality—in some parts of Australia weather forecasting being more reliable than at others. A change of weather being always more or less favourable to hunting they naturally come to note the characteristics of impending weather changes.

"The stories they tell of the stars are probably traditional, and though possibly subject to verbal variations and embellishment, they have sufficient power of imagination to improvise on the moment's notice, and hence their yarns if not absolutely repetitions would always bear reference to events or stories they had either experienced or heard of on previous occasions such as corroborees or camp fires.

"Their weapons, implements, &c., depend very much on the local requirements. Thus, at Cooper's Creek there is little game, hence they have no skin bags, but make bags out of woven grass. On the west coast they have hardened wood spears, but on the north-west coast where rocks would soon destroy the point, the natives make use of stone-headed spears. The only implement of one exact pattern universal throughout Australia is the boomerang,

Bows and arrows are only used on the coast near Cape York, and are not Australian, but imported from New Guinea. They make use of a digging stick which may be compared to a short stumpy spear about 6 to 7 feet long, the head slightly flattened, and about $1\frac{1}{2}$ inches broad, charred and scraped.

"Exceptionally intelligent natives are occasionally met with, some of whom show remarkable pluck, but the intellectual powers and characters of the aboriginals vary as much as in any other race.

"Natives will occasionally attack whites without any provocation. Once the party was attacked in a part of the interior of the west coast, where previously no Europeans could possibly have penetrated, and after the fight the natives acknowledged that they had seen some bacon fat in the camp which they wished to possess, and that they would not have made an attack had they deemed the Europeans so powerful. As the whites push out, however, the pioneers being often men of reckless character, troubles with the gins (females), retaliation, by means of a night surprise, are more often the cause of native attacks than otherwise. But even where all acts of offence have been avoided by the whites the aggressive character of the aboriginals has always led to war between the diverse races.

"Natives probably are occasionally destroyed by floods, by insufficient foreknowledge, or want of care the same as animals. On one occasion a party of three natives were destroyed by a fire of their own lighting—the fire closed round behind them in the scrub, and their only chance of escape lay in their going through the flames the consequences of which act cost them their lives.

"The importance of the native coloured drawing published by Grey, in his 'Travels,' is much exaggerated. The colours are by no means so bright as printed, and the drawings are, generally of a very primitive kind, more or less crude outlines of hands or weapons placed on the face of rocks, and lines marked round the edge of the object. The colours are charcoal red, yellow, blue, and white clays, without any special preparation."

APPENDIX III.

A Few Notes on the Farming, etc., of the Kafirs and Basutos. By H. E. Rouquette, Esq.

[At my request, in January, 1885, Mr. Rouquette, nearly six years resident in South Africa, was kind enough to write out these notes, which have likewise been handed to the Council of the A.I.—H. L. R.]

"THE soil chosen for cultivation is nearly always low lying, alongside streams and rivers, and sheltered, if possible, from the south-west or cold winds. Here the ground is usually very rich from the alluvial earth constantly washed down from the surrounding mountains and hills by the heavy rains, and the vegetation in consequence grows very rank. This is a point also considered, for where a special kind of grass called 'tambooti' grows luxuriantly

the soil will always yield good crops. The 'tambooti' is a grass growing about five or six feet high, and is extensively used for thatching purposes both by the whites and blacks; the stem is a little thicker than wheat straw, and when dry is used by the Kafirs for lighting purposes instead of candles; the root has a sweet scent, and is collected and dried, and, when required for use, pounded and mixed with water for personal washing, in order to give a perfume to their bodies.

"Before commencing to till the land the grass is always first burnt off, and when the rains set in, in the spring, about October, and the ground becomes sufficiently softened after the six dry winter months, ploughing begins. After the first ploughing the ground is allowed to lie for a year until the following spring, in order that the roots may wither and rot; it is then reploughed, and if the earth is sufficiently broken up, the land is sown, otherwise it is ploughed over again.

"Sowing is usually done by scattering the seed broadcast and ploughing or hoeing it in. In gullies and places where the plough cannot be used, or where the Kafirs do not possess ploughs, the land is broken up with iron hoes bought at the stores. The two kinds principally used are *A*, the common English hoe; and *B*, a circular disc with a digit projecting from the same plane.

"*A* is usually used by the more advanced Kafirs, and where ploughs have first broken up the ground; a thick stick for a handle being put through the ring at the top. *B* is stronger than the other, and is more used in the districts which are less civilized and where the plough is not so frequently used. A handle is fixed on by driving the point through the end of a stick at right angles to it. Weeds grow very rapidly and soon choke the crops if the land is not kept constantly hoed, until the mealies, &c. attain a certain height. Frequently through the laziness of the Kafirs in not attending to this and thinning the plants sufficiently, heavy crops are a rarity.

"The natives thresh wheat, beans, and Kafir corn (amabele) a kind of millet seed, by beating the ears with sticks or rubbing them in their hands; mealies by rubbing two cobs together.

"The grain is winnowed by pouring it from baskets to the ground from a height, when the wind carries away the husks.

"The women do all the work with the exception of ploughing, which involves the use of oxen, and the men only do this on account of their superstition, which does not allow women to have anything to do with the cattle.

"There are no fences, but the small boys of the kraal are employed to herd the cattle from the growing crops, and they are assisted in this by burning the grass off around their gardens. When the Kafir corn is in seed, the women and girls are in the gardens from early morning till eve to frighten the birds away.

"Besides the grain crops the Kafirs cultivate pumpkins, Kafir potatoes, sweet potatoes (batata) or yams, and madumba—the latter is a tuber about the size of a Brazil nut, and grows and has a leaf

like the coladium. It is poisonous, I was told, unless boiled and the skin peeled off. The pumpkins are generally sown broadcast amongst the mealies, partly to keep the weeds from growing up, and partly for shelter from the hot sun. The Basutos are much more advanced in civilization than any other Kafirs, and are the only ones that cultivate wheat.

"Mealies and Kafir corn are universally grown by both Basutos and Kafirs, but not other produce. When the mealies are gathered they are stowed away in pits dug in the cattle kraal, each pit holding about 10 cwt.; this is for dryness and to keep them from being attacked by the weevil, a small beetle.

"The implements used are mostly the American No. 75 plough and the English hoe; the latter can be bought for 2s. or 3s. at the stores, and there are very few Kafirs who cannot save money enough to buy one. In fact, a hoe is part of the dowry given to a girl when she gets married, by the father or the head of the kraal. Kafirs are very jealous of their tools, and few will lend them, without payment, to another, the women particularly so. The Kafirs still use stone and wooden implements in some part of the country, the latter for digging holes, and in digging up roots, &c., and the former for hatchets, chisels, &c. I have also seen a plough made by a Basuto, but I think from the appearance of it, the native must have copied an American plough. The mould-board was of wood, with a sharpened stone attached to it for a share, the knife also was a stone sharpened. The fastenings were raw hide and rope made from the bark of creepers; the other parts being of wood.

"Cattle are not merely a sign of wealth, but are also kept for food. Formerly the men used only to eat beef, and fowls were only eaten by the children, pork never being eaten by any Kafirs. Now, cattle, sheep, goats, pigs, and fowls are eaten indiscriminately by men, women, and children. Horse flesh is also consumed by Basutos, but not by other Kafirs."

APPENDIX IV.

Letters from Sir J. B. LAWES, Bart., F.R.S., Rothamsted Park, St. Albans, on the exhaustion of soils, on the comparative exhaustion by root or cereal crops, and on the comparative fertility of forest and prairie soils.

(A)

"Craig House, Dalmally, 13 Oct., 1885.

DEAR MR. ROTH,

We have grown forty-two crops of wheat without manure, and the produce is now about fourteen bushels per acre, or more than the average of the United States or Australia. A few years ago we thought that the decline in the produce was a quarter of a bushel per annum, but latterly the decline is very much less, still the loss of fertility in the soil is measurable by chemical analysis. The term exhaustion as ordinarily applied to soils means, I think, that the weeds have choked the crop. I allowed a portion of my four-

teen bushels to seed itself, and I then left it to contend against the weeds. In one year the crop was almost destroyed, yielding less than one bushel per acre, while the produce of two bushels sown and kept clean yielded fourteen bushels. The cereal grain crops possess a power to find food in an unmanured soil which neither potatoes nor turnips possess. I have an unmanured rotation which has been going on for nearly forty years, turnips come in every fourth year. The second crop of Swedes, although kept clean, ceased to produce bulbs, and you may say the root producing power of the land ceased for ever; but fine crops of wheat and barley are still being grown. We have recently published analysis of a number of Manitoba soils showing what enormous stores of fertility exist in those prairie soils. . . .

Yours truly,

J. B. LAWES."

(B)

"Craig House, Dalmailly, 18 Oct., 85.

DEAR MR. ROTH,

We have grown unmanured potatoes for ten years, but for twenty years previously the land had been growing wheat without manure; the last crop of potatoes was $2\frac{1}{4}$ tons per acre. As a general rule the soils under forest trees are much poorer than the soils under pasture or prairie vegetation. I believe this fact is well-known by experience in the United States. I have a wood which I should think had been covered with oak trees for several centuries, there is hardly any underwood or any green undergrowth and the leaf fall must have rotted underneath. I made an analysis of this soil a few years ago, and it was very much poorer than the soil of my permanent pasture which had been mown for thirty years, and had received no manure. Some of the Manitoba soils almost equal the Russia Black soils in fertility.

Yours truly,

J. B. LAWES."

The Secretary read the following extracts from a letter addressed by Dr. S. J. Hickson to Dr. E. B. Tylor, dated from Talisse, North Celebes, Dec. 1, 1885:—

NOTES on the SENGIRESE.

By Dr. S. J. HICKSON.

I HAVE just returned from a most interesting trip to the Sengirese and Talauer Islands. The Sengirese race seems to be an exceedingly interesting one and well worthy of further investigation.

At Manganitu in Great Sengir I had opportunities of ob-

serving them and gathering information about them. I was for three days in the house of the rajah and during that time in constant converse with Mr. Steller, a German missionary who has worked amongst them for twenty-eight years.

Firstly let me describe the house of the rajah and some of its contents. It was built almost entirely of bamboo and stood about 20 or 30 yards back from a very good and well-kept street; the paths, grass plot, and croton hedges being evidently well and constantly attended to. In front of the house was a verandah $5\frac{1}{2}$ yards broad, and from that a staircase of five or six steps led into the house. This was simply one large room divided by 6-foot partitions into a large central compartment and a number of small sleeping compartments, one of which I shared for three nights with the Dominie of Menado.

Covering the walls and roof of the verandah, the hall, and our bed room, were magnificent specimens of koffo, a great deal of which had been made by the Queen (called here the Tuwan Bohki). I managed with some difficulty to purchase a piece of this and also a set of the weaving apparatus with a piece of koffo in course of construction.

In the corner of the verandah I noticed a very curious time-piece and mode of keeping the time. It consisted of three parts: Firstly, a sand-glass made of two beer bottles placed mouth to mouth containing some black volcanic sand which ran through in just half-an-hour; 2nd, a number of sticks strung on a piece of string and notched with 1, 2, 3 . . . 12 notches, and a hook which was suspended between the last hour struck and the next one. At every half-hour (day and night) the sentry reversed the half-hour glass, readjusted the hook on the string, and if it were the full hour struck the number on the third part of this complicated apparatus—the gong. I have got the notched sticks, but I could not get the half-hour glass as there was not another one in the village to replace it. I have, however, made a drawing of it, and have instructed my boy to make an imitation of it.

The Sengirese have evidently inhabited these islands for many generations. Their language contains a very large vocabulary, but I am unable to say how far it is related to the local dialects of North Celebes or the Philippine Islands. I have got a prayer-book and a book of psalms translated into Sengirese by Mr. and Miss Steller, and the Gospel of St. Luke and another prayer-book translated by Mr. Kelling.

The Sengirese were and are still great mariners, travelling long distances in their sailing boats, many of which are capable of holding 60 or 100 men, for the purposes of trade, the capture of slaves, and fishing. It is a remarkable fact that Tahiti is

the Sengirese word for "rain." As evidence of their qualities as mariners, I may mention that they have 28 days each with a different name, and that they have complete Sengirese names for all the points of the compass. I have got a list written out for me by a Manganitu man of all these.

The dress and coiffure of the Sengirese are such as I described in a previous letter. The only women who wear gay-coloured clothes seem to be the Christians and the concubines of the Chinese. The name of the crescentic fringe of hair is *Pakoe*. The name of the knot of hair on the top of the head of the women is *Botto*.

The Sengirese are not as tall as the inhabitants of Minahassa; they have fair complexions compared with the Malays, high cheek bones, thick upper lips and oval-shaped eyes. Of their hair, which is black and straight, I have got some specimens.

Their marriage customs are purely *matriarchal*, both in endogamy and exogamy. The man always goes to the house of his wife and becomes a member of her family. In exogamy the woman comes to the village of her future husband once before marriage to show her beauty, but the man must go to the village of his future wife to be married, and must stay there at least one year after marriage, after which he may return to his own to see his friends or transact business, but must again return to his wife's family and consider himself a member of her family. The *harta* or dowry paid by the man to his wife's parents is paid in tens, in plates, *slaves*, firearms, cotton goods, &c.

The only persons who are free from the matriarchal system are the sons of the rajahs, who do as they please about following their wives.

The above was told me by Mr. Steller at Manganitu, and may be relied upon as true.

I made, however, numerous enquiries of the rajahs, &c., and I may as well give you the facts I gathered with their various sources:—

1. Mr. Kouveray, formerly Contrôleur of Sengir, told me that the matriarchal system exists all over the Sengirese Islands, but could give me no further details.

2. The rajah of Morong (in Talauer) said the husband invariably goes to the house of the wife and becomes a member of her family. If there is a divorce (an occurrence which is very common) the children go "where they don't cry." In case of the adultery of the wife, the co-respondent has to pay a fine to the *parents* of the woman.

3. The rajah of Pulutan (in Talauer) said that the man goes to the house of the wife and remains there. The children of

the marriage, when they are old enough may choose the family to which they will belong, *i.e.*, whether they will belong to the family of their father or mother.

4. The Rajah of Karatong (in the Nanusa Archipelago) said that the man invariably went to the house of the woman, both in endogamy and exogamy.

5. Mr. Gunther (the missionary at Manarang in Talauer) said that the man follows the woman both in endogamy and exogamy; the reverse does occur, but is very rare. The harta or dowry varies with the rank of the woman. For the daughter of a rajah a man must pay 30 slaves, each valued at 45 fl. Divorces are very common, and a rich man is constantly being married to different women and divorcing them again.

6. The pilot, a Sengirese man, who now calls himself Peter Elias, said, speaking of the Sengirese generally, the man always goes to the house of his wife whether she lives in the same village or not. In exogamy the woman only goes to the village of her husband to show herself. The harta (dowry) paid for a rajah's daughter is 12 slaves, 12 gongs, 12 silk (?) shirts, 12 china plates, 100 small plates, 12 swords and 1 katti of gold or its equivalent in money. The children belong to the kampong of the wife.

Other evidence of a similar character I obtained from missionaries, rajahs, &c., but it would be mere repetition for me to go over it all here.

A word or two about the inhabitants of the Talauer Islands and the remote Nanusa Islands.

There is no doubt that there is a large intermixture with Sengirese, and I daresay at many of the coast places a considerable proportion of the population is unmixed Sengirese, but I believe there is a true Talauer race, just as there is a true Talauer language, but that many of them have been carried away as slaves by the Sengirese pirates or driven to the remote islands or less fertile parts of the larger ones.

At Pulutan, a remote village in Salibabu, one of the Talauer islands, a rajah came on board with his principal people who were strikingly different from the true Sengirese. Their hair was wavy (not straight) allowed to grow long, and in one or two cases plaited in long thin plaits, their upper lips and *alae nasi* were thin, and they all had a fearful vacant expression strikingly different from the sad but not unintelligent expression of the Sengirese.

At the Karatong kampong in Nanusa, the most remote islands we visited, situated twelve hours steaming north-east of Salibabu, I saw plenty of men of the same type (although they had nearly all completely shaved their heads). I asked the rajah

how long his race had inhabited the islands and he immediately answered "Always," and stoutly denied that they had come from Sengir. This Karatong kampong was one of the most interesting I have seen. It was surrounded by a low mortar wall. There were only eight very large houses, each capable of holding four or five hundred people, and they were arranged in an oblong to which there was, as far as I could see, only one entrance. Each house had only one ladder and this was generally in the middle of the house. Each house was built on piles ninety-one inches high. After a careful examination of them externally and internally, I am perfectly certain that these houses have grown. That is to say, the houses have been added to at the sides (both sides) as the family increased in size. I cannot say that they are growing or will grow, as there is no more room in the oblong kampong for their expansion.

Let me here digress a little to make a few remarks on the growth of houses.

The houses of the Karatong kampong grew in two directions, right and left of the ladder. In Lirung, a kampong in Salibabu, they grow only in one direction, right of the ladder. In Manganitu, in Petah, and in some of the Sengirese houses here in Talisse, I have noticed that additions are made at the back of the houses. The meaning of these different modes of growth is obvious. The first two are adopted where there is room on account of the greater facility in adding to the roof. The latter mode was introduced when they began to build their houses in streets as the Sengirese almost invariably do. A more important point however than this is the gradual diminution, or to use a Dutch word, the "*verkleining*" of houses as the civilization or wealth of the inhabitants increases. This struck me particularly in my return journey from Nanusa, as we gradually got within touch of civilization and the wealth of the inhabitants increased. The largest houses I saw were in Nanusa where foreign vessels very rarely call. In Lirung the houses were somewhat smaller, none of them I should think capable of holding more than 200 persons. At Manarang, also in Talauer, a kampong which contains 3,500 inhabitants, and carries on a considerable trade, the houses were still smaller, but nevertheless some of them must have been able to accommodate 60 or 100 persons.

In Taroena and Manganitu, the two most important places in Great Sengir, and the centre of the cocoa-nut trade, places where money is used and cocoa trees cultivated, &c., &c., the houses were not large enough for more than ten or twenty persons (except the houses of the rajahs, whose numerous followers all claim shelter under their roofs). One step further in this

process and we arrive at mere hovels only capable of holding a man, his wife, and two or three children, such as we find in such a place as Menado, where natives and Europeans live and freely trade and mix together.

If I am not mistaken there is something of the same kind going on now in the suburbs of London and the other large towns in England, where the demand for large well-built houses seems to have nearly ceased, and rows upon rows of small houses are springing up in all directions.

To return, however, from this digression to the house of the rajah of Karatong in Nanusa.

When I entered the house I found the rajah sitting with his back to the central wooden pillar in the large entrance hall surrounded by the president rajah, the djoegoegoe, the Capitains laut, and the other officials. A miserable lot they were too, all of them ill-clad, ill-fed, with vacant expressions and helpless appearance. Around the hall were the usual bamboo partitions about five and a half feet high, which divided the rest of the house into sleeping compartments for the various members of the large family, and over these were to be seen the heads of the half-naked women who seemed to be there in swarms. Hanging on a long bamboo from the ceiling was a row of little wooden praus and one little pyramidal cage in which there was a little wooden figure. The praus, I learnt, are hung there for protection against diseases, which are supposed to put to sea in them and thus leave the island. I immediately opened negotiations for the purchase of these things. At first the rajah would not allow them to be touched, but he afterwards, as my prices went up, consented to let them go, and I have now got them all with the exception of the best prau, which was taken by the resident, and the little figure in the cage, which disappeared as the man was taking it down from the roof. We only stayed a couple of hours in Karatong, so I was not able to do as much work there as I should have wished. I am very sorry our time there was so short, as I believe it is the best place for enquiring about the original Talaurese, a race of men which I believe would thoroughly repay the thorough investigation of a competent anthropologist.

Slavery, as you will have gathered from what I have said above, flourishes in Sengir and Talauer, and the Dutch Government have at present taken no steps to suppress it. In Great Sengir there are three kingdoms, Taboekan on the east coast, and Taroena and Manganitu on the west. In Manganitu alone is slavery being gradually abolished, owing to the efforts of Mr. Steller, the German missionary there. Some of the modes of making slaves are not uninteresting.

In the manipulation of sago and rice, quantities of the material are often left in an old prau in the woods until they are ready for consumption. If during this process a man passes by the prau, it is supposed that he takes away the spirit of the sago or padi, or what not, and if caught he is at once seized by the rajah, and he and his whole family become slaves.

When a man dies who has been accustomed to fish in any particular place, that place is often declared to be holy. It is given over to the dead, in order that his ghost may come and fish there as he did when alive. It is "*tabu*" as they say in the South Sea islands, or "*pilih*" as they say in Sengir.

If any one is seen by the family of the deceased to go there in a canoe or to fish there, he is at once brought before the rajah and becomes a slave of the family of the deceased.

There are many other ways of making slaves. Thus, when a particular region is in mourning for any one, any person using a parasol, wearing ornaments, or otherwise breaking the laws of mourning is made a slave.

The facts which I have laid before you in these notes prove, I think, that the Sengirese race is a very old one, and probably a partially degenerated one. The Sengirese differ from the Alfurs of Minahassa not only physically but also in their customs and morality. In Sengir, as I have pointed out, there is a true matriarchal system, among the Alfurs of Minahassa the system is patriarchal (according to Wilken). The morality between the sexes is in the former case very strict, and in the latter somewhat lax. The Sengirese were in former times enterprising, daring, and war-like. I believe that the Alfurs of Minahassa were not.

The question then naturally arises, did the Sengirese come *via* Minahassa, Celebes, etc., or *via* the Philippine islands from Eastern Asia? This question I cannot answer, and as I know nothing about the Philippine islanders I dare not speculate upon it. I do not know that anyone has yet attempted to answer it, but when we consider the geographical position of these islands and the many interesting traits which their inhabitants show, I cannot help thinking that it is one that is well worthy of solution.

Names of the Days of the Month in Sengirese.

Nama-nama boelan di langit.

1. Těkalě (New moon).
2. Kahoemata pakesa.
3. Kahoemata karoeane.
4. Kahoemata katelloene.

5. Sehangoe haresě.
6. Batangengoe haresě.
7. Likoeđ'oe haresě.
8. Sehangoe lettoe.
9. Batangengoe lettoe.
10. Likoeđ'oe lettoe.
11. Awang.
12. Sehangoe pangoempia.
13. Batangengoe pangoempia.
14. Empaoese.
15. Limangoeng boelan.
16. Těpping.
17. Sai pakesa.
18. Sai karoeane.
19. Sai katelloene.
20. Sehangoe lettoe.
21. Batangengoe lettoe.
22. Likoeđ'oe lettoe.
23. Awang.
24. Sehangoe pangoempia.
25. Batangengoe pangoempia.
26. Empaoese.
27. Limangoen basa.

MAY 11TH, 1886.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the GOVERNOR OF LAGOS.—Catalogue of Exhibits of the Colony of Lagos, in the Colonial and Indian Exhibition, 1886.

From the ACADEMIA DE CIENCIAS MÉDICAS, HABANA.—Boletín de la Sociedad Antropológica de la Isla de Cuba. Tom. I. Nr. 1-6.

From the ARCHEOLOGICAL SOCIETY OF AGRAM.—Viestnik hrvatskoga Arkeologickoga Društva. Godina VIII. Br. 2.

From the BERLIN GESELLSCHAFT FÜR ANTHROPOLOGIE.—Zeitschrift für Ethnologie. 1886. Heft 1.

- From the DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE.—Correspondenz-Blatt. 1886. Nr. 3.
- From the LIBRARIAN OF THE MITCHELL LIBRARY, GLASGOW.—Report, 1885.
- From the AUTHOR.—Die künstlichen Schädelverbildungen im Allgemeinen; und Zwei künstlich verbildete makrocephale Schädel aus Ungarn; sowie Ein Schädel aus der Barbarenzeit Ungarns. By Joseph von Lenhossék.
- Die Ausgrabungen zu Szeged-Óthalom in Ungarn. By Joseph von Lenhossék.
- Ancient and Modern Britons. By David MacRitchie.
- Accounts of the Gypsies of India. By David MacRitchie.
- What is Consumption? By G. W. Hambleton.
- The Guesde Collection of Antiquities in Pointe-a-Pitre, Guadeloupe, West Indies. By Otis T. Mason.
- Remarks on Indian Tribal Names. By W. J. Hoffman, M.D.
- Note sur les Sacs Laryngiens des Singes Anthropoïdes. By MM. Deniker and Boulart.
- Les Crânes des Suppliciés. By L. Manouvrier.
- Sopra alcuni cranii di negri conservati, nel Museo di Anatomia Comparata della R. Università di Napoli. By Michele Centonze.
- Sopra altri tre cranii Italo-Greci, uno dei quali plagiocefalo. By Michele Centonze.
- From the ACADEMY.—Atti della Reale Accademia dei Lincei. Vol. II. Fas. 7, 8.
- From the INSTITUTION.—Journal of the Royal United Service Institution. No. 133.
- From the SOCIETY.—Proceedings of the Royal Society. No. 242.
- Proceedings of the Royal Geographical Society. 1886. May.
- Proceedings of the Asiatic Society of Bengal. 1885. Nos. 9, 10.
- Journal of the Asiatic Society of Bengal. No. cclxvi.
- Journal of the Society of Arts. Nos. 1743-1746.
- Papers and Proceedings of the Royal Society of Tasmania. 1885.
- VIII. Jahresbericht des Vereins für Erdkunde zu Metz für 1885.
- Bulletin de la Société Impériale des Naturalistes de Moscou. 1885. Nos. 1, 2.
- From the EDITOR.—Nature. Nos. 859-862.
- Science. Nos. 165-167.
- Matériaux pour L'Histoire de L'Homme. 1886. April.
- Revue d'Anthropologie. 1886. April.
- L'Homme. No. 5.

The PRESIDENT exhibited some cakes of Roman enamel suitable for standards of colour to be used in anthropological descriptions, and read the following notes on this subject:—

NOTES on PERMANENT COLOUR TYPES in MOSAIC.

By F. GALTON, M.A., F.R.S., President.

DURING a brief stay in Rome, I recently made such inquiries as I could, into the suitability of the material used in the manufactory of mosaics, for affording permanent specimens of standard colours for the description of tints of skin. The original paintings by Broca, as well as the lithographs from them, have already changed colour, and some more permanent standard is needed; this I have little doubt, could be best obtained by means of the material used for making mosaics. The general result of what I am about to describe is that about a dozen identical slabs should be made, each containing six small pieces of mosaic material, lettered respectively, A, B, C, D, E, and F, and severally brought into relation with corresponding tints on Broca's scale. These slabs which need not be larger than letter-weights, could be distributed among the existing Anthropological Institutions and Museums, and would form practically unalterable standards of reference whence painted copies might be made from time to time, as often as desired, for the use of travellers.

The mosaic material is glass rendered opaque by oxides of tin and lead, and is manufactured in flat cakes, circular or otherwise, of usually about six inches in diameter, and a quarter of an inch thick. Each cake is a hard vitreous mass, from which pieces are chipped, of approximately the required shape, and which are then ground on a lapidary's wheel to the exact size; next they are polished on the exposed side, and are afterwards cemented into their proper places. Each cake is of uniform tint throughout, except in rare cases where, possibly from over baking, I noticed a ring of a lighter color. The material is inexpensive, costing a very few shillings per pound weight. If I am not mistaken, it is a very difficult matter to produce an exact tint to order. The method employed appears to be to make a large number of trial tints, and to sort and classify according to results.

There are upwards of forty thousand bins in the Vatican manufactory, containing the proceeds of different attempts. Out of these no less than 10,752 are classified; they occupy 24 cases in each of which are 16 rows of 28 samples. The flesh tints appropriate to European nations (such as those which are found in the second of the two pages of selections from Broca's tints, which appear in the "*Anthropological Notes and Queries*") are about 500 in number. We may therefore conclude, that a superabundance of material exists in the Vatican manufactory, whence a series of standard tints, such as anthropologists desire, admit of being selected.

There can be no question as to the persistence of the colours of mosaic. I examined carefully some in St. Peter's that were more than a century old, and was astonished at their freshness throughout. They seemed to be brand-new. If the surface of mosaic is dirty, it can be freely washed. If stained in any way, the stain can be ground off. If the surface is roughened it can be repolished.

M. Topinard informs me that as the original tints of Broca have already changed colour, he is engaged in preparing a new and much smaller series of only five or six tints, for hair-color to serve as a fresh departure. These will of course be correlated with Broca's numbers. I have written to M. Topinard, explaining about the mosaics, and inviting him to send me the five or six tints that he provisionally selects, in order that I may ascertain how nearly they may be matched by existing mosaic material, and I hope that if the difference is in no case considerable, it may be found possible to make a compromise by adopting the mosaic tints as the final standards. I would willingly charge myself with the trouble and such small cost as there may be in obtaining the mosaic material. At the same time I fear it is possible from some former experience that an application to the Vatican may not prove successful; that experience, which I may as well put upon record is as follows:

Many years ago, having been much impressed by a visit to the Vatican manufactory, and being equally impressed by the then faulty nomenclature of colour, I wrote to the authorities at South Kensington, suggesting that they should make application to the Vatican for samples of their large collection of mosaic material, and select therefrom a considerable scale of standard tints. Also that a small and second selection from these tints should be supplied to schools of art. This scheme, which I need not now describe more minutely, was taken up by the South Kensington authorities, and the late Lord Amthill, then Mr. Odo Russell, our semi-official representative at the Papal Court, was asked to inquire into the feasibility of bringing it into effect. It was perfectly feasible in all respects save one, namely, that the price asked by the Papal government was altogether excessive, and so the matter dropped. Now, however, resulting not improbably from my then abortive suggestions, I find that such samples are being produced. I saw one set in process of being made.

If it should not be found easy to procure samples from the manufactory in the Vatican, it may be possible to obtain them from private dealers in mosaics, but after my inquiries at Rome, I doubt if any of the private dealers possesses a collection of tints comparable in variety and quantity to that in the Vatican,

and it might prove difficult to obtain from them the exact tints that will be required. Anyhow, I propose to try what can be done towards putting anthropologists in possession of standard sets of permanent tints, and I shall of course communicate the results, if they prove favourable, to the Anthropological Institute.

DISCUSSION.

Mr. RUDLER exhibited some cakes of Roman and Venetian enamels, and called attention to the permanence of their colours. The enamels may be regarded as opaque varieties of glass, consisting of various silicates, borates, and boro-silicates. The opacity of an enamel is commonly obtained by the use of stannic oxide ("putty powder," or binoxide of tin), which, being infusible, is mechanically suspended in a finely comminuted condition through the substance of the glass, producing, if the vitrified base be colourless, a dense white enamel. Colour is obtained by the use of various metallic oxides, some of which remain suspended in the vitreous vehicle, while others enter into chemical combination with some of the constituents of the glassy flux and form metallic silicates and borates. Many of the colours which are of interest to anthropologists, such as the browns and reds, used to denote tints of skin and hair, belong to the former class, being due to the presence of peroxide of iron; while the blue tints for eyes, being furnished by the oxides of cobalt or of copper, belong to the latter group. In either case the stability of the colours is beyond doubt, fugitive pigments being quite unable to withstand the temperature necessary for the fusion of the enamel.

Professor MELDOLA suggested that if, on account of expense or other difficulties, it was not found convenient to get the mosaics from abroad he had no doubt that some of our English manufacturers, such as Messrs. Doulton of Lambeth, might be found willing to take the matter up.

Professor FLOWER exhibited and described a skull from one of the Nicobar Islands, and Mr. C. ROBERTS and Professor THANE made some remarks upon the subject.

EXHIBITION of a NICOBARESE SKULL.

By Professor W. H. FLOWER, LL.D., F.R.S., P.Z.S., Vice-President Anthropol. Inst.

PROFESSOR FLOWER exhibited a skull obtained by Mr. E. H. Man on Nov. 19, 1885, in a native village ossuary in Teressa Island (Nicobar) and presented by Mr. Man to the Zoological Department of the British Museum.

In reference to the specimen, Mr. Man observes in a letter to Professor Flower, "the natives of that and certain other islands of this group are in the habit of first burying their dead, then, after six months or more, disinterring and cleaning the bones (with the water of young cocoanuts) and placing them for twenty-four hours in the chief mourner's hut, after which they are replaced in the same grave. This practice of disinterring the bones is sometimes repeated two or three times, according to the status of the deceased when alive, after which the remains are conveyed to a certain spot in the jungle which may be described as the village ossuary, as it is there that all the bones of their dead have been from probably remote times deposited and left to decay. This, I believe, is the first Nicobarese skull yet sent to England, if not to Europe, which is due to the jealous and superstitious regard paid by the people to their dead, their dread ever being that any lack of respect to the remains will enrage the departed spirit and ensure condign punishment in the shape of sickness, death, or other misfortune, to the offenders. And yet after the remains are disposed of in their final resting place, no further notice of them is taken, the spot itself being entirely neglected and uncared for."

The skull is that of a man, apparently past middle life, although the only actual obliteration of suture is seen in the lower end of the coronal. There are no teeth present in the upper jaw, and the alveoli are very much absorbed, showing that many of the teeth must have been lost, or at all events much loosened during life. Complete sockets alone remain for the right incisors, canine, and premolars. It is not impossible, however, that rough usage of the skull after death may have had something to do with this. In the lower jaw, sent with the skull, the two posterior molars remain on both sides, and are well-formed, white, and sound teeth. The third molar (wisdom tooth) is on both sides (but especially the left) misplaced, being tilted with its crown forwards, the upper surface resting against the hinder surface of the preceding tooth. The rest of the alveoli, except where they have been broken after death, are complete, so that all the teeth must have been present. As the condyles are both broken, it is difficult to be certain whether the jaw belongs to the cranium, but as far as can be judged it fits fairly well.

Though a small skull, it is heavy, dense, and thick-walled, and probably that of a male; the general surface is smooth, and the ridges for muscular attachments not strongly marked. The sagittal and coronal sutures are both simple; the lambdoidal moderately complex, with a group of Wormian bones at each asterion. The supra-occipital bone has a large piece of the

upper portion of the right side detached by a well-marked dentated curved suture, running completely from the lambda to the asterion.

The capacity of the cranium is 1259 cubic centimetres; its circumference 195 mm. The cranium is dolichocephalic; length, 178 mm.; breadth, 131 mm.; index, 73·6; higher than broad; height, 134 mm.; index, 75·3. The glabella is not strongly marked, the face is broad and flat, with prominent malar bones; bi-malar width, 98 mm.; naso-malar 104 mm.; naso-malar index (Oldfield Thomas), 106·1. Inter-orbital width, 29 mm. Nasal bone, wide and flat. Nasal height, 45 mm.; width, 25 mm.; index, 55·5. Orbits, small; width, 34 mm.; height, 29 mm.; index, 85·3. Enough alveolar margin remains to show that the jaw was prognathous, the basi-nasal length being 100 mm., and the basi-alveolar at least 103 mm.

As a detailed description of a single skull would be of little value, it will suffice to say that the general aspect of the face agrees with that of the photographs and descriptions given by Mr. Man of the Nicobarese, a people having strong Malayan affinities. The length of the skull in proportion to its width is rather greater than might be expected, but it is well known that among Malays there is great difference in this respect.

Professor THANE read the following note, in the absence of the author:—

NOTES on some SOUTH AFRICAN SKELETONS.

By Professor A. MACALISTER, F.R.S.

SOME time ago I received from my former pupil, Dr. Gorman, five skulls, and one complete and several partial skeletons from South Africa. These he dug up in a cave at Plettenberg Bay, near Kaysma. The cave had been a dwelling, as in it were two fire places, and a vast quantity of shells lay about one of them, while around the other there were rows of graves. Dr. Gorman thought that probably this might indicate that the sick and infirm were sent to the smaller fire, and buried as they died in graves of a foot or so in depth. They were buried as they died, on their side, with their heads on their knees, and their hands beside the head.

Dr. Gorman noticed particularly that in several of the skeletons the last lumbar vertebra was ankylosed to the sacrum, and that the sterna were often perforate.

The skeleton was that of a man of 146 cm. in height, with strongly pilastered femora and platycnemic tibiae. One knee had

been the subject of articular disease, and was ankylosed in a bent position. The pelvis was dolicho-pellic and dolicho-hieric. The ossa innominata singularly small, and the scapulæ particularly oblique.

The skull measurements were as follows:—

	1	2	3	4	5
Length.. ..	182	170	182	183	176
Breadth	137	135	143		
Height	129	124	125		
Breadth index ..	753	794	786		
Height index ..	709	729	687		
Basal-nasal length ..	93	90	90		
Basal-alveolar length ..	88	92	96		
Alveolar index ..	946	1022	1067		
Orbital height ..	32	28	28		
Orbital width ..	40	39	40		
Orbital index ..	800	718	700		
Nasal height ..	43	41	38		
Nasal breadth ..	26	22	25		
Nasal index ..	605	537	658		
Capacity	1365	1175	1495		

These were too broken to afford accurate measurements.

The teeth were very much worn, the last molars small, the palate wide, not very deep. The posterior nares short and oblique. The skulls all showed a tendency to synostosis; the nasals were small, flat, irregular. The mandibles had particularly low rami and slight chin projections, in No. 2 the maximum height of the ramus was 43 mm. The femoral index was 135, the scapular 860.

The skulls thus agree with the ordinary Bushman skull in most respects being microseme, platyrrhine, tapeinocephalic, mesaticephalic. No. 1 is orthognathous, Nos. 2 and 3 are prognathous. No. 3 is megacephalic, while No. 1 is meso-, and 2 is microcephalic.

NOTES on a SKULL from NEW IRELAND.

By Professor MACALISTER, F.R.S.

THE Anatomical Museum of Cambridge has received from Dr. F. O. Hodson this interesting skull from New Ireland. Dr. Hodson, writing to Professor Humphry states that these men are cannibals. "Twenty of them ran away from a plantation in Mackay, N.Q., and made a camp on the top of 'Blackfellow's Mountain,' where they decoy, kill, and eat other Polynesians or Kanakas. This man was about five feet seven inches in height, slim, and died of dysentery in the Mackay Polynesian Hospital; colour, dark copper; habits, very savage."

The skull is markedly hypsi-stenocephalic (Davis), and microcephalic; the capacity 1347 c.c., with a breadth index of 689, and

a height index of 733. It is prognathous (alveolar index 1031) megaseme (orb. index 927), leptorhine (nasal index 429). In these last two characters it differs from the majority of the skulls of neighbouring islanders, the average Fijian being platyrhine and mesoseme.

Of other characters noticeable in this skull, the principal are simplicity of the sutures; one Wormian bone in the sagittal suture below the obelion; several in the lambdoidal; the left half of the squama occipitis being formed of a Wormian bone. The foramen magnum is large, with a double lip in front, and the condyles are small, the articular cartilage spreading to the jugular process. The left jugular and posterior condyloid foramina are small, while those on the right are large. The mastoid processes are small. The auditory meatus is thin-edged and shallow. There is a spheno-maxillary suture on both sides, excluding the malar from the spheno-maxillary fissure, and a pterygo-maxillary contact of the sphenoid and maxilla, the palate bone not intervening.

The lachrymal bone has an enormous and monkey-like hamulus 5 mm. in depth on the right side, and there is an ossiculum naso-lachrymalis.

The teeth are large, complexly tubercled, very little worn. The palate measures 53 from the alveolar point to the nasal spine, and 60 transversely outside the widest part of the alveoli, the last molar has three separate fangs, and is a large tooth, measuring 9 in antero-posterior, and 12 in transverse diameter.

Measurements in Millimetres.—Length 180; breadth 124; height 132; basi-nasal line 96; basi-alveolar 99; orbital height 38; orbital width 41; nasal breadth 21; nasal height 49. Capacity 1347 c.cm.

Dr. J. G. GARSON read a paper on "The International Agreement on the Cephalic Index," upon which Professor FLOWER and Professor THANE made some remarks. This paper has been printed in the last number of the *Journal of the Anthropological Institute*, p. 17.

MAY 25TH, 1886.

FRANCIS GALTON, ESQ., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors.

FOR THE LIBRARY.

- From the SECRETARY OF STATE, GUATEMALA.—Informe de la Oficina de Estadística, 1885.
- From the UNITED STATES GEOLOGICAL SURVEY.—Bulletin, Nos. 15-23.
- From the DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE.—Correspondenz-Blatt. 1886. No. 4.
- From the AUTHOR. On the Site of the New Admiralty and War Offices, Whitehall. By E. C. Robins, F.S.A.
- Neue Beiträge zur Anthropologie der Juden. By Constantin Ikow.
- From the ROYAL ARCHEOLOGICAL INSTITUTE.—The Archæological Journal. No. 169.
- From the BATAVIAASCHE GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.—Tijdschrift voor Indische Taal-, Land-, en Volkenkunde. Deel xxxi. Afl. 1 en 2 (Eerste Helft).
- From the K. AKADEMIE VAN WETENSCHAPPEN, AMSTERDAM. Jaarboek. 1884. Verslagen en Mededeelingen: Reeks iii. Deel 1.
- From the ACADEMY.—Atti della R. Accademia dei Lincei. Vol. II. Fas. 9.
- Boletín de la Academia Nacional de Ciencias en Córdoba. Tom. viii. Entr. 2, 3.
- Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg. Tom. xxxi. No. 1.
- From the ASSOCIATION.—Transactions of the National Association for the Promotion of Social Science. 1885.
- From the SOCIETY.—Bulletins de la Société d'Anthropologie de Paris. 1886. Fas. 1.
- Journal of the Society of Arts. Nos. 1747, 1748.
- Vierundzwanzigster Bericht der Oberhessischen Gesellschaft für Natur- und Heilkunde.
- From the EDITOR.—Nature. Nos. 863, 864.
- Science. Nos. 169, 170.
- The Photographic Times. Nos. 241-243.
- L'Homme. No. 6.
- Bullettino di Paletnologia Italiana. Tom. ii. N. 3, 4.

MR. REGINALD STUART POOLE, LL.D., D.C.L., Univ. South, of the British Museum, gave an address "On the Egyptian Classification of the Races of Man." The lecture was illustrated by two plates in lieu of diagrams, showing twelve typical representations.*

* These plates will be published, with the full text of the address and the discussion, in a future number.

These representations were taken from monuments dating from about B.C. 1400 to 1200. In considering them we must remember three leading characteristics of Egyptian art :

- (1) That in reliefs and frescoes the eye was represented full face, and therefore we have to make allowance for this peculiarity in our attempt to define the types. This done, and the comparison made with sculptures in the round, of which we had examples of some leading types, we found
- (2) Remarkable naturalness and force of character, reminding us of early Italian sculpture, leading to
- (3) Love of caricature in its portrayal of hostile nations, for which again allowance must be made.

The first representations described were taken from the famous scene of the "Four Races of Man" in the tombs of the Kings at Thebes. These races, characterised by marked difference of type and colour, were (*a*) the Egyptians, or Red skins; (*b*) the Shemites, or Yellow skins; (*c*) the Negroes, or Blacks; (*d*) the Northerners, or White men.

The Egyptian race we find by comparison of representations to comprise the people of Southern Arabia and the opposite coast of Africa, as well as the Phœnicians. The Shemite type is practically unvaried.

The type of the Northerners in representations of the enemies of the Egyptians who occupied Libya and certain Islands in the Mediterranean, shows a variety marked by very strong super-orbital ridges and a retiring forehead, and probably depicts the oldest European race, as Professor Flower afterwards observed; another variety was well characterized by M. Bertin as Armenian.

The Negro race is represented in the pure Negro, and what may be called the Nubian variety. It has not yet been possible to class the Shepherds or Hyksos and the Hittites. The type of the Hyksos was illustrated by a lithograph of one of the famous sphinxes from Zoan, in which Professor Flower in unconscious coincidence with other men of science immediately recognised striking Mongolian qualities.

The Hittite race could not as yet be classed, probably because the armies of the confederacies headed by this nation were drawn from various races including Tatars. Mr. Poole impressed upon the Institute the importance, before it was too late, of obtaining photographic copies of the Egyptian representations of the races of man, the most interesting and characteristic in all ancient art.

JUNE 8TH, 1886.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

The Minutes of the last ordinary meeting were read and signed.

The election of JOSEPH J. MOONEY, Esq., of Star, South Molton, Devon, was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

- From Dr. O. FINSCH.—Die ethnologische Ausstellung der Neu-Guinea-Compagnie im Königl. Museum für Völkerkunde.
 — Catalog II. der ethnologischen Sammlung der New Guinea Compagnie ausgestellt im Kgl. Museum für Völkerkunde.
 — Ueber die ethnologischen Sammlungen aus der Südsee. Von Dr. O. Finsch.
- From the AUTHOR.—Tombe della Cattabrega presso Crescenzago. By P. Castelfranco.
- L'Amour dans l'Humanité, essai d'une ethnologie de l'amour. By Professor P. Mantegazza.
- From the BERLIN GESELLSCHAFT FÜR ANTHROPOLOGIE.—Zeitschrift für Ethnologie. 1886. Heft 2.
- From the DEUTSCHE GESELLSCHAFT FÜR ANTHROPOLOGIE.—Correspondenz-Blatt. 1886. May.
- From the SOCIETY OF ANTIQUARIES.—Archæologia. Vol. xlix.
- From the SOCIETÀ ITALIANA DI ANTHROPOLOGIA.—Archivio per l'Antropologia e la Etnologia. Vol. xvi. Fas. 1.
- From the MAGYAR TUDOMÁNYOS AKADEMIA, BUDAPEST.—Almanach, 1885; Nyelvtudományi Értekezések, xii., 1-5; Nyelvemléktár, vol. xi. xii.; Nyelvtudományi Közlemények, xviii., 2, 3, xix., 1; Történettudományi értekezések, xii. 1, 2, 4; Társadalmi Értekezések, vii., 1-9; Bölcsészeti értekezések, ii., 1-7; Nemzetgazdasági értekezések, ii., 1-6; Szilágyi, Bethlen és a svéd diplomácia; Vécsey, Aemilius Papinianus; Péch, Alsó-Magyarország bányamívelésének története, vol. i; Corpus Statutorum I; Vázlatok az Akadémia félszázados történetéből; Ungarische Revue, 1881, 5-12; 1882, 1-10; 1883, 1-10; 1884, 1-10; 1885, 1-7; Bulletin, i, ii, iii; Naturwissenschaftliche Berichte, vol. ii.
- From the ACADEMY.—Atti della R. Accademia dei Lincei. Vol. II, Fas. 10, 11.
- From the SOCIETY.—Proceedings of the Royal Geographical Society. 1886. June.
- Journal of the Society of Arts. Nos. 1749-1750.

From the SOCIETY.—Scientific Transactions of the Royal Dublin Society. Vol. iii, 7-10; vol. iv, 7-9; vol. v, 1, 2.

— Bulletin de la Société Neuchateloise de Géographie. Tom. I.

From the EDITOR.—Nature. Nos. 865, 866.

— Science. Nos. 172, 173.

— American Antiquarian. Vol. viii, 3.

— Photographic Times. Nos. 244, 245.

— Revue d'Ethnographie. 1886. 2.

— Matériaux pour l'Histoire de l'Homme, 1886. May.

— L'Homme. 1886. No. 7.

— Annalen des K. K. Naturhistorischen Hofmuseums. Band i. Nr. 2.

The PRESIDENT announced that arrangements having been made for holding a series of meetings in the Conference Hall of the Colonial and Indian Exhibition, the Ordinary meeting on June 22nd would not be held.

MR. C. H. READ, F.S.A., read a paper on the Ethnological Exhibits in the Colonial and Indian Exhibition, upon which the President made some remarks. This paper will be published in the next number of the Journal of the Anthropological Institute.

MISS BUCKLAND read the following paper:—

On AMERICAN SHELL-WORK and ITS AFFINITIES.

By A. W. BUCKLAND.

I WISH to call the attention of anthropologists to the very remarkable works in shell, obtained chiefly from mounds in many of the States of North America (Illinois, Missouri, Tennessee, Arkansas, Alabama, Virginia, Florida, Georgia, New York, California, &c., &c.), which do not appear to have any counterparts in Europe, but which seem to me traceable across the islands of the Pacific, and perhaps to Japan. In a most interesting and instructive paper on this subject in the "Second Annual Report of the Bureau of Ethnology," published by the Smithsonian Institute, Mr. W. H. Holmes observes: "In a broad region at one time occupied by the mound-building tribes, we observe a peculiar and an original effort—an art distinctive in the material employed, in the forms developed, and to some extent in the ideas represented. It is an age of shell, a sort of supplement to the age of stone." He then proceeds to show that the American Indians, even to the time of the Spanish Conquest, employed shell in conjunction with flint and obsidian, not only

as knives or scrapers, but as celts, clubs, agricultural implements, fish-hooks, and sinkers, as well as manufacturing it into pins, beads, necklaces, earrings, gorgets, and other personal adornments. In fact, shell in America seems to have taken the place of bone, amber, and jet, as used in Europe, and to have supplemented stone for weapons, wherever, as on the southern coast, that useful commodity was scarce, but it would also appear to have become so favourite a material, that it was carried for hundreds of miles inland, and must have formed, both in the raw and manufactured state, a most important article of commerce at a very remote period.

Shells of small size, perforated and polished, have been almost universally employed as ornaments, and beads cut from shells are also found very widely distributed in graves of a pre-historic age, not only in America but in Europe; but in the manufacture of shell beads of all forms and sizes, America stands pre-eminent, uses having been devised for them which have made them valuable, both as money and as historical records. How far the pre-historic races of America made use of beads as currency cannot now be known, but it is certain that the early European writers on America all speak of their use as money, and the great number found in ancient grave-mounds, makes it probable that even in remote times they possessed a certain monetary value. Wampum, so well known by name, and which in modern times has played so important a part in American history, consists entirely of beads, made with great labour from shells, ground and perforated, formerly by stone implements, but now by metal awls, the beads, purple and white, thus formed, being strung together in different patterns, so as to denote various events. Simple strings of wampum have been used from time immemorial as money, their use as such being described by all the early writers, but their development into historic records is probably more modern. It is, however, impossible to enter upon the history and uses of wampum, but whilst speaking of beads, I must refer to a form, apparently peculiar to America and called Runtées, described by Schoolcraft¹ as consisting of a "circular piece of flat shell from one and a-half to two inches in diameter, quartered with double lines, having the devices of dots between them, and being doubly perforated in the plane of the circle."

It is, however, to the ornaments called gorgets that I wish particularly to call attention. These gorgets consist of plates of shell having holes bored for suspension, being also elaborately carved and ornamented; the ornamentation being generally of such a character as to denote some sacred and

¹ *History of Indian Tribes*, vol. III., p. 79.

symbolic meaning. Among the ornaments thus engraved the cross in various forms is conspicuous, but there is another often-recurring method of ornamentation to which Mr. Holmes attaches great importance, and of which I give an enlarged drawing.¹ The three central spirals, the band of double circles with dots in the centre, and the outer scalloped edge are all repeated over and over again, although with variations as regards the number of circles and the direction of the spirals. Of these Mr. Holmes writes: "The student will hardly fail to notice the resemblance of these disks to the calendars or time symbols of Mexico and other southern nations of antiquity. There is, however, no absolute identity with southern examples. The involute design in the centre resembles the Aztec symbol of day, but is peculiar in its division into three parts, four being the number almost universally used. The only division into three that I have noticed occurs in the calendar of the Muyscas, in which three days constitute a week. The circlets and bosses of the outer zones gives them a pretty close resemblance to the month and year zones of the southern calendars."

Curiously enough, we find this same design somewhat modified on the great drum from Japan exhibited in the Inventions Exhibition at South Kensington last year, of which I give a drawing from a hasty sketch. In it may be seen the same spirals, three in number, although turned in the contrary direction to those on most of the shell gorgets from America; nevertheless, there are examples there also of the curve to the *right* instead of the reverse; then there is the plain zone which in the Japanese drum is divided, and painted with the three elemental colours, red, green and blue; beyond this, we get the balls or circles, but much more numerous than in the shell gorgets, and each containing the same ornament as in the centre; and beyond that the scalloped border. The design has evidently a meaning, and that it is one connected with the sun, is evidenced not only by the gilt centre and the triskele² which is known to be a sun symbol, but also by the gilt sphere with surrounding rays above. The background of this gigantic drum I had not time to sketch, but it consists of the great sacred dragon, surmounted by an ornament which doubtless symbolizes flames.

Turning to another design frequently represented on these shell gorgets, we find a strong similarity to engraved shell ornaments from the Admiralty and Solomon Islands, in the British

¹ The drawings referred to here and in other portions of this paper were in the form of diagrams and have not been reproduced, but some of these designs may be seen in the plates illustrating Mr. Holmes's article in the Second Annual Report of the Bureau of Ethnology, in the library of the Institute, and in the exhibits from the Solomon and Admiralty Islands in the British Museum.

² This same figure is found also in wood carvings in Scotland, see Dr. Munro's book.

Museum. It may be observed that the inhabitants of the Pacific Islands seem particularly expert in the manufacture of shell beads, ornaments and weapons; that they still use celts of shell, like the ancient examples from America, and with them knives, &c., of obsidian. They have also developed, especially in the Admiralty Group, the art of carving very delicately in tortoiseshell, and laying plates thus carved upon plain disks of shell, but they have in addition to these, *engraved* shell disks, the pattern being painted black. One of these, I believe from the Solomon Islands, I reproduce somewhat roughly, and I counted seven in the same case, all bearing nearly the same design, in which the three birds' heads form constantly a conspicuous feature; it seems evident, therefore, that the bird has a sacred and symbolic meaning in these islands as among the ancient Americans, and its reproduction in this manner upon similar shell disks, which are worn either as breast-plates or on the front of the head, is a curious and significant fact not easily to be accounted for as independent inventions. The American examples were doubtless worn in the same manner, as they are each bored with two holes for suspension. Among the American gorgets we find, in addition to the birds, many curious and elaborate designs, in several of which the human form is introduced, reproducing almost exactly the characteristic Mexican type; one very highly-finished specimen has an engraving of two human figures with wings and birds' claws, in others the human figure is conventionalised and distorted in a most extraordinary manner, and the same may be said of the rattlesnake which is very frequently depicted, but is often only to be distinguished by the characteristic rattle. The spider also is represented generally with a cross on the back, but the most curious form is that which is supposed to have been a mask, upon which the features of the human face are rudely carved. The use of masks is almost universal, and everywhere among savages or barbarous races they are used in religious ceremonies and very frequently as a covering for the face of the dead, the object being disguise or concealment from an evil spirit. These American shell masks are however, I believe, unique, and I wish to draw particular attention to the diagonal lines which would appear to be tattoo marks, and which strongly resemble those on masks from some of the South Sea Islands.¹

The nearest approach to these shell masks is seen in an elaborate mourning dress from Hawaii in the British Museum,

¹ It is of interest to observe that among the figures of aborigines in the Indian section of the Colonial and Indian Exhibition is one of a Hill Naga, who not only wears necklaces and armlets of shell of the American pattern, but whose face is tattooed in diagonal lines, like the masks here referred to.

where the face is covered with shells forming a mask, and the breast is likewise covered with shell disks resembling those from America but not engraved. The American masks are very massive, cut from large univalve shells, the size being about seven inches by six.

There is one very important point to be noticed with regard to these works in shell; quoting from Mr. Holmes: "Within the United States ancient tablets containing engraved designs are apparently confined to the Atlantic slope, and are not found to any extent beyond the limits of the district occupied by the stone-grave peoples. Early explorers along the Atlantic coast mention the use of engraved gorgets by a number of tribes. Modern examples may be found occasionally among the Indians of the north-west coast, as well as upon the islands of the Central Pacific." And yet the designs engraved upon many of them are so distinctly Mexican in character, that he adds, speaking of the gorget from Missouri, "It represents a sacrificial scene and has many parallels on the paintings and sculptures of the south, whereas no such design is known in the art of any nation north of Mexico. It thus appears obvious that both the material and the designs for these elaborate works in shell must have been brought from immense distances, indicating wide and extensive inland intercommunication or migration, whilst the discovery of these works of art in the graves of the mound-builders, gives to this commerce or migration at least a considerable antiquity. The paintings of Mexico, and the sculptures of Central America, would seem to show that shell ornaments like those described were once common there. The scarf of the priest in the famous Palenque Sculpture is apparently a Runttee, upon which a cross is engraved, and a Mexican necklace appears to contain a shell mask like those of the mounds. I believe many of these things might be traced also to Peru, whilst they were certainly in use among the Indians at the time of the Spanish Conquest. Mr. Holmes, quoting from Davis's "Spanish Conquest of New Mexico," says: "In travelling north along the west coast of Mexico, the Friar Niza encountered Indians who wore many large shells of mother-of-pearl about their necks, and farther up towards Cibola, the inhabitants wore pearl shells upon their foreheads;¹ and Cabeza de Vaca, when among the pueblos of New Mexico, noticed beads and corals that came from the 'South Sea.'"

By the *South Sea* Davis may perhaps have meant the Gulf of Mexico, but there are so many things in common between the islands of the Pacific and the ancient inhabitants of North

¹ Note a similar mode of wearing them among the Admiralty Islanders, Mr. Moseley's paper, Journ. Anthro. Inst. May, 1877.

America that we are tempted to believe that the commerce which apparently extended from Mexico in the south to both coasts of the American continent, must also have been carried across the Pacific to Japan prior to the Spanish Conquest. Not only do the shell ornaments which I have described appear to be reproduced in form, and to a certain extent in ornamentation among several groups of islands in the Pacific, particularly in the Admiralty and Solomon Islands, but the shell implements and weapons in use there, are also similar to those found in the mounds of Tennessee and other States of North America. The nose pins adorned with shells now in use in the Admiralty Islands, are apparently similar to those worn in ancient Mexico, and which are still worn among the Indians of the north-west. Wampum is also in use in some of these islands, made of beads exactly like the American, being cut from shell, ground and perforated with much labour, although European beads must now be easily procurable. These beads are also threaded in patterns like the American, and a bracelet was exhibited by Lady Brassey at a meeting of the Anthropological Institute last year, to which was attached threads of beads. Dr. Guppy, who had lately returned from these islands, described these strings of beads as used not only as money, but as denoting certain things, which is evidently an approach to the American use of wampum.¹

We are not of course bound to believe that *direct* communication existed between the American coast and the Admiralty Islands, although we must bear in mind the fact recorded by the Spanish navigator, that he saw a Peruvian vessel with sails set, far out at sea laden with merchandise. It is impossible to suppose that this vessel started on a haphazard expedition, or that it was the only one of its kind. We are not told what were the articles of merchandise thus transported, but doubtless beads and shell ornaments were among them, and even if Easter Island was the point aimed at, it is both possible and probable that compassless vessels sometimes wandered or were driven by storms to other islands of the Pacific, and hence the merchandise, or copies of it, may have been distributed from island to island, and have thus become general.

In connection with this subject, I would wish to call attention to two statements of Prof. Moseley in the interesting paper read by him at the Anthropological Institute some years ago,² on the inhabitants of the Admiralty Islands. The first is the occurrence, at Humboldt Bay, of one in every 15 or 20 of the inhabitants of

¹ Massive shell bracelets with strings of beads attached may also be seen among the exhibits from New Guinea, in the Colonial and Indian Exhibition.

² Anthro. Journal, May, 1877.

an arched Jewish nose with dependent tip, which I would suggest may possibly be rather the *American* than the Jewish type: the other is, that some of the men, particularly those supposed to be priests, are accustomed to blacken portions of their bodies, apparently with a religious meaning, with which I would compare some of the Mexican paintings, in which the priests or executioners are constantly painted black.

These are only a few out of many resemblances which might be traced, but they must suffice for the present. Dr. Tylor has pointed out many similarities between the arts, the calendars, and the games of Japan and Mexico, and believes in an intercourse, although not necessarily of very ancient date, between Mexico and the East. It, however, seems to me probable, from the shell ornaments I have so imperfectly described, that that intercourse may be traced across the islands of the Pacific, subsisting during the era of the mound-builders, and continuing to the time of the Spanish Conquest. Those who consider such an intercourse at so early a period impossible will say—If it existed we should find other and more marked traces of it. To this I would reply that I believe other traces may be found if searched for, but that it is precisely by such relics as those described that past commercial relations between distant lands can be traced. Could all intercourse between Europe, Asia, and the islands of the Pacific be now suspended for three or four centuries, what traces of our present extensive commerce would be found in those remote lands at the end of that period, beyond a few beads, some disjointed religious beliefs, perhaps a word or two of English, some puzzling ethnic peculiarities, and feeble traces of European architecture and agriculture? How, therefore, can we expect to find more definite traces of an intercourse which must necessarily have been less frequent in times less civilized, and when navigation was yet in its infancy?

Since writing the above, I have been favoured with a copy of the Third Annual Report of the Bureau of Ethnology, Washington, and find in it, amongst other important matter, a most interesting article by Mr. William Healey Dall, on "Masks, Labrets, and certain Aboriginal Customs, with an inquiry into the bearing of their Geographical Distribution."

I have long been impressed with the great anthropological significance of the use and distribution of masks, and have contemplated the possibility of studying the subject, in order to bring it before the Institute; it is therefore peculiarly gratifying to me to find that Mr. Dall, in his very elaborate article corroborates the views I have formulated in this paper, and in that read by me before the Institute last year, as to a pre-historic intercourse between the South Sea Islands and the western

coasts of North and South America, although he traces that intercourse *to* instead of *from* America. I, however, presume to think that it will eventually be found to have existed in both directions.

As Mr. Dall's article bears so much upon the subject of this paper, I may perhaps be allowed to quote from the summary.

"There can be no doubt," says Mr. Dall, "that America was populated in some way by people of an extremely low grade of culture at a period even geologically remote. There is no reason for supposing, however, that immigration ceased with these original people. Analogy would suggest that from time to time accessions were received from other regions, of people who had risen somewhat in the scale elsewhere, while the inchoate American population had been doing the same thing on their own ground. Be this as it may, we find certain remarkable customs or characteristics geographically spread north and south, along the western slope of the Continent, in a natural line of migration, with overflows eastward in convenient localities. These are not primitive customs, but things which appertain to a point considerably above the lowest scale of development in culture." Mr. Dall then goes on to speak of customs and myths, adding "If these were of natural American growth, stages in development out of a uniform state of culture, it might fairly be expected that we should find them either sporadically distributed without order or relation, as between family and family, wherever a certain stage of culture had been reached, or distributed in certain families, wherever their branches were to be found. This we do not find."

"The only alternative which occurs to me is that these features have been impressed upon the American aboriginal world from without. If so, from whence?" Dismissing northern Asia and Europe as giving no help in the matter, Mr. Dall turns to Polynesia and Melanesia, pointing out that from the last of the chain of islands stretching across the Pacific, it is but a step comparatively, swept by the northerly current, to the Peruvian coast. "We observe also that these islands lie south from the westerly south-equatorial current, in the slack water between it and an easterly current, and in a region of winds blowing towards the east." He then goes on to say, "The instances, &c., I have called attention to, are particularly the use of masks and carvings to a more than ordinary degree, labretifery, human head preserving, identity of myths"

"In Melanesia we find carved figures of a peculiar sort used in religious rites, or with a religious significance, and strangely enough, two or more figures in a peculiar and unaccustomed

attitude, especially devoted to these purposes.¹ Again, in Central America and Mexico we meet the same attitude, and again on the rattle in the hand of the shaman on the north-west coast, and in the carvings on his head-dress, and by his door."

He then goes on to point out a variety of customs and myths in the South Seas, similar to those in America, and, whilst deprecating any idea of a common origin, says, "But from my point of view, these influences have been impressed upon people already developed to a certain, not very low degree of culture."

"Of course this influence has not been exerted without contact. My own hypothesis is that it was an incursion from Melanesia, *via* south-eastern Polynesia, which produced the impact, perhaps more than one. In all probability too, it occurred before either Melanesian, Polynesian, or American had acquired his present state of culture, or his present geographical distribution."

The impulse communicated at one point might be ages in spreading, when it would probably be generally diffused in all directions; or more rapidly, when it would probably follow the lines of least resistance and most rapid intercommunication.

"The mathematical probability of such an interwoven chain of custom and belief being sporadic and fortuitous, is so nearly infinitesimal as to lay the burden of proof upon the upholders of the latter proposition.

"It has to me the appearance of an impulse communicated by the gradual incursion of a vigorous, masterful people upon a region already partly peopled by weaker and receptive races, whose branches, away from the scene of progressive disturbance, remained unaffected by the characteristics resulting from the impact of the invader upon their relatives."

I would gladly quote more from this very instructive article, but must content myself with commending it, with the article by Mr. Holmes on "Art in Shell," in the second volume of the Reports of the Bureau of Ethnology, to all who are interested in tracing the pre-historic movements of ancient races.

DISCUSSION.

Mr. WALHOUSE remarked that during his residence in Southern India he did not remember shells being used in dress or decoration, although he had upon more than one occasion found a number of

¹ The carved figures here referred to may be traced to New Zealand, as may be seen in the New Zealand Court in the Colonial and Indian Exhibition, where also may be noticed another peculiarity common to the Maories and the North American Indians, which is, that in both countries the women are tattooed *only* on the chin or round the mouth, and I am told that in New Zealand these tattoo marks are only done after marriage, but I do not know whether that is the case also in America.

small sea-shells of the genus *Voluta* in pre-historic graves, which had evidently been strung and used as necklaces, and this at localities far distant from the sea. The chank shell, bored and adapted for blowing as a trumpet, is however very generally used in temples and in households, not only in India, but in Japan and China too, to announce religious observances. Now and then a chank is found with the whorls turning the reverse way to the ordinary variety. Such a specimen is highly prized, regarded as a magical and fortunate possession, and often presented as a special gift to wealthy and distinguished personages. The chank is a distinguishing attribute of the god Vishnu, who holds it in one of his hands.

The SECRETARY read the following paper, which was illustrated by a large collection of objects of ethnological interest exhibited by the Author:—

*On the MALDIVÉ ISLANDS, more especially treating of
MÁLÉ ATOL.*

By C. W. ROSSET, Esq.

THE Maldivé Islands are situated in the Indian Ocean, and occupy a space of about 470 miles north to south, and 70 miles from east to west, extending between latitude $7^{\circ} 6' N.$, and $0^{\circ} 42' S.$, and between longitude $72^{\circ} 33'$ and $73^{\circ} 44' E.$ The group contains upwards of 12,000 islands, which lie in clusters called Atols, of which there are more than twenty; but the Maldivians divide them for political purposes into thirteen atols. The King's or Sultan's Island is situated in Málé Atol, which is also the nearest to Ceylon, from which it is distant about 400 miles; while the most northerly Atol, Ihavandifolo Atol, is distant about 350 miles from Cape Comorin, the southern-most point of India.

The islands of Málé Atol are of coral growth, though I also found several pieces of lava rock and pumice stone on the shores. From what I was able to gather from the natives, these stones have only been found during the last few years, and it is, therefore, more than probable that they came from Java after the great eruption of Krakatao.

There are no watercourses in Málé; water is obtained from wells, and is mostly brackish and unwholesome. Málé is very unhealthy in the hot season, during the N.E. monsoon, as the sea water in the lagoons becomes rapidly fetid under the action of the powerful sun, and emits a pestilential stench. During the S.W. monsoon, however, the waves break over the coral reefs

surrounding the lagoons, thus renewing the confined water continually.

The first accounts we have of the Maldivé Islands appeared about the years 1343-4, in a work by an Arab traveller named Ibn Batúla. In 1602-1607 appeared the description of François Pyrand de Laval, who made a long sojourn in the islands; and later we have the accounts of Captain Moresby and Lieutenants Christopher, Powel and Young, who surveyed the group in 1834-36. In 1883 H. C. P. Bell, Esq., of the Ceylon Civil Service, visited the islands, and embodied the result of his observations in an elaborate and exhaustive treatise, which was printed by the Ceylon Government.

The islands, however, must be still considered practically a *terra incognita* to Europeans, as with the exception of François Pyrand de Laval, no European has, so far, made any prolonged stay there, the climate of which has always been considered as dangerously unhealthy.

For this reason I determined to visit the islands after completing my labours among the Veddas of Ceylon, and become acquainted with the people; not doubting that I should find much that was interesting: the result so far has fully justified my expectations.

My intention at first was to make a complete ethnographical, zoological, and botanical collection, also to obtain photographs of the inhabitants, places, and objects of interest; with a view to publishing a book on the Maldives. I was unable to carry out my plans entirely on this first visit; the Sultan of the Maldives, being suspicious as to the object of my journey, refused to allow me to quit the *Málé Atol*, in which the King's or Sultan's island lies. He could not understand that a European would pitch his tent among his people for some months for the purpose of collecting arms, earthenware jars, knives, cloths, tools, fish, shells, animals, snakes, birds, butterflies, &c., &c., and imagined this to be simply a blind to cover some political design. His suspicions had most probably been aroused by the recent arrival from Zanzibar of the news of the action of Germany in that region, and he was determined that I should have no opportunity of hoisting a flag or in any other way obtaining a political footing in the islands. However, after seeing me hard at work for seven weeks, he seems to have become convinced of the non-political character of my mission, and I received from him permission to depart from *Málé*, and visit the other *Atols*, but it was then too late, as the vessel which was to convey me with my collection back to Ceylon was then due, and as I had promised to exhibit my collection at the Colonial and Indian Exhibition in London, my return to Ceylon could not be delayed.

The result was that I had to quit the Maldives with my work half finished ; but I intend to return there again in the autumn, when I hope to be able to visit the entire group.

My stay in Málé extended over seventy days, during which time I made a collection of ethnological objects, and zoological specimens, and also took upwards of eighty photographs.

As far as industries and manufactures are concerned, there is much room for improvement, though this is far less the fault of the inhabitants than that of the Sultan. This latter is a thorough Mussulman, and will not have anything to do with Europeans. When H. C. P. Bell visited the island, the Sultan resolutely refused to receive him, although he came on the part of His Excellency the Governor of Ceylon, and he did not even reply to several letters which Mr. Bell wrote to him ; however, he condescended to accept the presents which were brought for him. The trade of the Maldives, such as it is, is capable of being greatly developed, were the Sultan so minded ; for instance, by building several hundred more fishing boats, the already important dried fish trade of Málé Atol would properly develop.

The export of tortoiseshell could become much more important than it is at present, while the justly admired Maldivé mats would find a large field open in Europe. These three trades alone, if properly developed, would greatly increase the prosperity of the islands, which at present appear to make no progress whatever. The Sultan's income is derived from the levy of a 12 per cent. duty in kind on all imports, which, however, appears to be somewhat irregularly collected, and from which small importations are partly or wholly exempt. The principal revenue derived from this import is paid in rice, cloth, and cowries, and serves mostly to supply the wants of his army. Besides this duty or toll a kind of poll-tax is levied throughout the islands, which is principally paid in cloth, grains and cowries, but I was unable to get any exact particulars on this subject, as the inhabitants of Málé are exempt. Although the Sultan derives a large part of his income from the foreign trade, he is not at all favourably disposed towards it, and possibly he may one day refuse to allow the Indian traders to settle in Málé so as to confine trade to his own subjects. His opposition to foreign trade is all the more hurtful to his subjects, as they are dependent upon India for about half of their food supply. No other part of the group is allowed to traffic with foreigners, all the produce having to be brought to Málé, hence the Sultan is enabled to keep a tight hand on the foreign relations of his dominion. During my stay I was able to get particulars concerning the import and export trade for 1885, and ascertained that the revenue result of the commerce of the last two years,

shows a debit balance of about Rs. 40,000, whilst the financial position of the islands is further complicated by the fact that the expenditure largely exceeds the receipts. The expenditure of the state is almost wholly on account of the Sultan, who, besides supporting the army, feeds and clothes the poor.

They live almost entirely upon fish and rice: as the islands are not capable of producing grain of any kind, the rice has to be imported from India. This trade is mostly in the hands of Bombay native merchants, who bring the rice over in native crafts of from 50 tons (*bodu hodi*) to 200 tons (*bandu hodi*) burden.

As already remarked, the Sultan would be very glad to dispense with the services of these merchants, but this is not so easily done, as the present deficiency in his treasury puts him quite in their hands. These Bombay merchants have shops in the bazaar at Málé, which is the only one existing in the islands, for which they pay the Sultan a rental of from 40 to 60 rupees per month. There are between 40 and 50 shops, and here a retail trade is carried on in piece goods, rice, sugar, coffee and tea, payment being made in Maldivian money and rupees; the latter gradually superseding the former. The general trade is still carried on, on the system of barter, the merchants taking in exchange for their rice cowries, dried fish, cocoanuts, tortoise-shell, coir and grass mats. The inhabitants of the other Atols send their fish, cocoanuts, &c., to Málé, where they are purchased by the Sultan, who gives rice, cloth, &c., in exchange, deducting at the same time the amount due for taxes. The Maldivians will not work so long as they possess any stock which they can exchange for rice; as soon as they can get no more food they set to work, catching fish, gathering cowries, or fishing for turtles. This refers only to the lower castes, who form about 60 per cent. of the population.

With regard to the population of the islands, I was unable to get anything like accurate information, and prefer, therefore, to leave this point untouched, rather than put forward mere guesses. In Málé, however, I was, of course, able to get a pretty correct idea of the figures; there are about 2,800 inhabitants on Málé Atol, with a further number of from 80 to 150 inhabitants from the other Atols who are temporary residents. Besides this there are about 50 to 80 Indian merchants. The population of Málé Atol may, therefore be put down roughly at 3,000 souls of whom at least 2,000 are in the service of the Sultan, attendants, soldiers, store-keepers, overseers, musicians, dancers, fishermen, &c., &c. These people are all supported by the Sultan, who gives them food and money, the former consisting of rice, areca-nuts, and dried fish, the latter being mostly paid in rupees; the salaries ranging from 12 to 20 rupees per month.

The high castes and ministers are recompensed for their services to the Sultan or to the state in land; that is, certain cocoanut islands are assigned to them, of which they receive the tribute or taxes. Most of these islands are given by the Sultan for the term of the recipient's life; and as soon as the holder dies they revert to the Sultan.

The different ranks and offices are divided systematically among the different castes, the distinctions of which are still most rigidly adhered to; though I believe that caste exclusiveness now is not pushed so far as it was a few centuries back. Great deference is paid to high castes by those of inferior station, who receive them standing, and only re-seat themselves when invited or ordered to do so. When meeting in the street the lower caste stands on one side until his superior has passed. The Sultan alone has the right to wear a hat and shoes, and only two besides himself, namely, his cousin and another relative, are allowed to carry umbrellas. These two are also the only ones who are permitted to eat with him. The Sultan's umbrella is white, his cousin's black, and Manifulloo's red. Persons of different rank must always eat separately, the higher caste taking his or her meal before the lower caste. A man and his wife never eat together; the woman must first wait on her husband and when he has finished she eats alone.

Marriages are celebrated with very little noise and ceremony, and are in fact extremely simple.

Both parties have to attend separately before the Katibu (the magistrate or head man appointed by the Sultan in all islands which have forty inhabitants or more) and declare their wish to be married. The man appears in person, the woman is represented by her parents. As soon as the Katibu has satisfied himself by questioning that the parties are agreed, he declares them married, and calls upon all present to bear witness to the contract. The Katibu's fee is 1 bodu lári = 4 kudalári, which is about equal to one penny English. After the marriage, the bride is accompanied to her new home by the spectators, who are entertained with feasting, music, and dancing. The husband receives no dowry with his wife; on the contrary, he is supposed to settle a jointure upon her equal to that settled upon her mother. It is also generally the custom for the sisters of a girl who makes a good match to take any of her superfluous clothes and ornaments and divide them amongst themselves. The high castes have generally three or four wives, four being the number which they may have, but must not exceed; the lower castes are also allowed four wives, but seldom avail themselves of the privilege on account of the expense of supporting them.

Although a man is allowed four wives at one time, it is only

on condition of his being able to support them, and cases have been known where the magistrate has refused to marry men whom they knew, or suspected, not to be in a position to endow and support the wife.

A man is able at any time to divorce one or more of his wives, the process being as simple as the marriage ceremony. A lower caste man has merely to send his wife away, while amongst the higher castes the rule is for both parties to appear before the Katibu and declare their wish to annul the marriage; in this latter case the man must appear in person, but the woman may send two witnesses to speak for her. Intrigues are naturally of every day occurrence under such a régime, but are not looked upon in the same light as in Europe. The divorced wife merely returns to her parents' home, sometimes with, sometimes without, the children, and has no difficulty in finding another husband, if so disposed. Both parties are at liberty to marry again immediately after the divorce. The Maldivians are very fond of change in the matter of wives, and I was told that it often happened that a man would marry and divorce the same woman three or four times in the course of his life. It will be readily understood that the Maldivians are almost strangers to the feeling of jealousy, at least as far as their fellow countrymen are concerned; but with a stranger, especially if a Christian, they are not at all so open. I speak more especially of the King's Island where the women are very chary of holding any intercourse with foreigners, not because they are personally averse to such, but because discovery of any intrigue would lead to their being banished to another (and generally uninhabited) island, which is for them a severer punishment than is death with us. Crime of any kind is extremely rare in the Maldives, so far as I was able to judge. It is possible that this may be especially the case in *Mâlé*, as I was told that the laws were not so strict on other islands; but the primitive life led by the Maldivians naturally makes them strangers to many of the temptations which beset more civilised nations.

The Maldivians bury their dead, but the ceremony is different from that observed in other Mahomedan nations.

No one is supposed to weep or wail, but it often happens that the relatives give vent to their grief involuntarily. After being washed, the body is swathed in white cotton, bound at the throat, waist, and knees. The nearest relations bring the corpse to the burying-place, carrying it on a bier made of Candon wood (*M. Kadú*). Earlier accounts of the Maldives mention that much noise is made by the mourners who follow in the procession weeping, wailing, and crying aloud, and further that presents were made to the crowd of spectators by the relations

of the deceased. This may have formerly been the case, or the inhabitants of other Atols may now follow this practice, but I can affirm that I saw nothing of this kind whilst I was in Málé. I questioned the Prime Minister on the subject, but he denied that the practice had ever existed, at any rate in Málé. I found, however, that it is still the custom that a Maldivian chooses his burial place during his lifetime.

The ceremony is extremely simple consisting of the singing of certain dirges and prayers from the Khoran by the priests. The lower castes distribute cowries, the high class rice and dried fish to the poor during the progress of the procession; the latter also making presents of gold, silver, and silk-stuffs to the priests; and one or more of the relatives sprinkle the processionists with perfumed water. When the body has been laid in the grave, this is filled up with fine white sand. Everyone is buried separately and a stone is afterwards erected over the grave, the size depending on the caste of the deceased, the shape on the sex. On the three Fridays following the burial the relations and friends of the deceased come to sprinkle white sand and pray over the grave, the priests singing meanwhile. The period of mourning is then over. In no case is a body transported from one Atol to another, a person is buried where he or she dies. This rule holds good even in the case of the Sultan.

Their method of living is opposed to the preservation of health; for instance bathing, smoking, and drinking bad water are excessively indulged in, added to climatic influences. They have no wholesome food, rice and dried fish, with heating condiments, which are sufficient to ruin the digestive organs, being the daily food of the people.

During my different journeys in the countries of the eastern hemisphere, I have had opportunity of studying many of the different types of races which inhabit it. When I first landed on the Sultan's Island where there are about 3,000 people, of which the women form a very large proportion, I was much struck by the resemblance which these latter bear to the Persians, with their light yellow-brown complexion and beautiful large black eyes. I saw some high caste women (which is allowed to very few Europeans) who were fairer than many of the women of southern Italy and Spain, but I should add that this type is rare in the Maldives. The men, especially those of the higher castes, resemble Arabs.

The lower castes are of a more mixed type, and appear to be more nearly allied to Mussulmans than Singhalese; although their language bears more resemblance to that of the latter than Hindustani or Arabic. Only a few high castes speak Arabic

whilst those who are in communication with, and have passed some time in Ceylon are alone able to speak Singhalese.

It is difficult to determine with any precision to which race the Maldivians belong; history merely tells us that the islands were colonised by a people of Aryan race and language, and no old manuscripts are in existence on the islands, which makes it impossible to do more than guess. It is generally believed that the islands were colonised at about the same time as Ceylon.

Formerly there were five different languages and characters used in writing: of these, however, only two are now used, the other three being understood only by the elder people. The five are—*Gabuli-tana*, *divehi*, *akuru-tana*, *narha-tana*, *defo-tana*. The first and second of these are the two now used, the *gabuli-tana* being the official language. The pronunciation is extremely difficult to indicate, as they do not divide their syllables and words in the same way we do ours.

I give a few examples:—

<i>English</i>	<i>Gabuli-tana</i>
nation	Mihängesai
vegetables	Kagaginkgassgahugetakdie
fruits	Kahugagannatakdie
grains	Otarukurewietakdie
quadrupeds	Mihungetärauläsophi
beasts	Waligaulä sophi
reptiles	Fajjnätti Candutschahaigindua sophi

I got a vocabulary with about fifteen hundred English words with the Maldivian equivalents written against them; but could not obtain permission to transcribe the characters. I hope to do this on my return. After much patient enquiry, I learned, (more especially from the high priest, Seedee Totoo, who is almost the only man able to give information on such matters), that there is a *Dagoba*, called *Havida*, in the jungle on the island of *Fua Mulaku*, and the ruins of a temple called *Ustumba* on *Hatadú Island*, in *Addú Atol*. I made every effort to get permission to visit these places with the view of photographing them; but the Sultan would not give it, so that I must try and manage it on my next visit. I showed the inhabitants of the above-named islands drawings of Buddhist temples and asked them if they had ever seen anything similar. They at once replied that they had seen such a house, and that similar carvings on stone were to be found on their islands. The high priest also promised to have some *Pandanus* leaves with old writings in *tana*, *narha-tana*, and *defo-tana* on them brought from those places for me. He told me that there were still some to be found.

The manners and customs of the Maldivians are very similar

to those of the Arabs. The lower classes are only friendly when the higher classes are; but in that case they are thoroughly so. I was already well acquainted with the great hospitality of the Mohammedan races, but most especially noticed that of the Maldivians as they are extremely poor. Theft and robbery are far less common than in India or Ceylon. The punishments consist for the most part of blows which are administered on the thighs and back with an instrument made of a thick piece of leather, shaped like the sole of a boot, fitted into a wooden handle. When the punishment is intended to be severe, short nails are fixed into the leather. After being beaten the offender is generally banished to some uninhabited island. Punishment by death is never resorted to, and is, in fact, unknown.

Superstition and religion are what mainly occupy the Maldivian mind. Their conversation is always full of the first, and the second is attended to in a way which I have seldom seen equalled. High castes go three or four times a day to the mosque to pray.

A book could be filled with particulars of demonolatry as believed in by the Maldivians. Every accident, every illness, every misfortune, is ascribed to the devil. No one goes out after dark if he can help it, for fear of meeting the devil in the streets. The priests, of whom the number is but limited, have, of course, very great influence, especially the high priest, who is (next to the Prime Minister) one of the most intelligent of all the natives with whom I came in contact, although he has no faith in anything European. He is the man best able to afford information about native manners and customs, laws, antiquities, &c.; but the Sultan having strictly enjoined him not to afford me that information I was able to learn very little.

I brought back with me a full collection of the articles of ornament and dress worn by the Maldivians, which are fully treated of in my catalogue. Most noticeable is the embroidery work of the women.

High caste women wear red satin dresses, embroidered with gold, silver, and silk which they work themselves; the materials being drawn from India and Ceylon. A fine silk cloth, with gold or silver edging, is also made on some of the southern islands. The women also wear gold, silver, and brass rings, brooches, earrings, necklaces, and bangles, the quality and fineness of which vary according to caste; the laws on this subject, however, are less severe than formerly, when a low caste girl was not permitted to wear ornaments which should be worn by a higher caste; she is now allowed to wear pretty well what she likes.

On great occasions, and when residing abroad, the men wear

a kind of Turkish or Arabian costume. The houses are very unhealthy. They are surrounded by walls of cocoanut leaves, six or seven feet high, so as to prevent anyone from seeing into the compounds; but which also prevents the free passage of air, and is the cause of illnesses lasting so long as they do. Everyone from the highest to the lowest, men as well as women, will squat for the entire day and talk or smoke.

When I was there the high castes would come daily to my house and sit around smoking and asking questions about Europe. As with all orientals, time is no object with them, and it is quite useless for anyone to be in a hurry.

The Sultan will take from eight to fourteen days to answer a letter or question; to delicately hint that you are pressed for time would simply result in your getting no answer at all.

The Maldivians are skilful handicraftsmen, and reminded me in this respect of the inhabitants of Cashmere. They are very clever in imitating knives, spoons, and other articles of European manufacture. This was a great help for me, as I was able to get accurate models made of some ethnographical articles which I was unable to bring away in their natural size; such as beds, turning-lathes, spinning-wheels, boats, &c.; which, with the aid of photographs of the original, fully answer the purpose. Every Maldivian must learn some craft before he can marry, according to his caste.

The high castes have lances made, with which they fence before the Sultan; they are also allowed to fence with sword and buckler, but only on special occasions, and by command of the Sultan.

They also pass much of their time in carving and colouring wood; middle castes mostly going in for music and tomtom playing. Mat and cloth making is only engaged in by servants and low castes.

The games and dances are very interesting, and I was able to take many photographs of them which will shortly be published in one or two of the illustrated newspapers.

There are two principal dances; one originally from the Laccadives, the other from the Maldives. The first is called Malikutarra, having been introduced from Malikai or Minnicoy. About fifteen or twenty persons beat on tomtoms, making certain regular movements at the same time; whilst three or four others sing a sort of accompaniment. The second or Todu originates from Ari Atol, and is an old Maldivian game. About twenty or thirty tomtom beaters stand round, whilst fifteen to twenty dancers, who carry wands, about six feet long, to the end of which tin boxes filled with cowries are attached, go through all sorts of rapid movements, striking the wands against each

other with great dexterity. The Sultan also invited me to a private concert, requesting me at the same time to take a photograph. The entertainment is called Wadchy. The tom-tom players sing, accompanying themselves on their instruments. The melody is Arabic, and was probably brought from Arabia; though I do not remember having heard it there.

The Sultan's private band is also interesting, but the instruments were of no value for my collection, as they are old Portuguese or Dutch. I could make nothing of what they played, but would say it was more Arabic than anything else. Not having been able to visit the whole group, I cannot pretend to be able to give a full description of these islands, and must leave the completion until my return from my next visit, which I intend making next autumn.

ANTHROPOLOGICAL CONFERENCES ON THE NATIVE RACES OF THE BRITISH POSSESSIONS

**Being a Series of Special Meetings of the Anthropological
Institute held in the Conference Hall of the Colonial
and Indian Exhibition.**

JUNE 1ST, 1886.

CONFERENCE ON THE RACES OF AFRICA.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

AFTER some opening remarks by the President,

The late Dr. MANN gave a brief description of the present condition of the native population of the Cape of Good Hope.

Mr. C. WEBB described some of the exhibits in the Natal Court, and called particular attention to the Kafirs and Bushman who were present in the hall.

Sir JAMES MARSHALL read a paper on the condition of the natives of the Gold Coast Possessions.

Mr. JOSEPH THOMSON spoke on the native races of Africa.

Mr. HAMILTON LANG read a paper on the natives of Cyprus, with special reference to the ancient and modern pottery, and to the survival of old customs, and the modern use of implements of a very antique type.

An adjournment to the African and Cyprus Courts then took place, where the various exhibits were more particularly described by Dr. Mann, Mr. Webb, Sir James Marshall, Mr. Joseph Thomson, the Rev. Mr. Payne, and Mr. Hamilton Lang.

OPENING REMARKS *by the* PRESIDENT.

THE Anthropological Institute has responded with much pleasure to the wishes of the authorities of this Exhibition to hold a series of conferences.

The opportunity is unprecedented of meeting men from all parts of the Empire who are familiarly acquainted with its native races, and of inspecting collections of high ethnological interest that have been arranged with cost and pains in the various courts. It will be one of our principal objects to learn the condition of the native races at the present moment, and to gather opinions concerning the value of the influence of the white man upon them; whether it has been directed as judiciously as might be desired, seeing that it has tended more frequently to degrade than to elevate—to destroy rather than to build up.

Humanity, considered as a whole, has been largely modified during the last two or three generations by our action, and its change must progress so long as the regions habitable by white men continue to be more and more filled through their expansiveness.

There are also signs, long foreseen and yearly growing more evident, that this great and recent spread of the white races of Europe may ere long be accompanied by a somewhat analogous spread of the yellow races of China.

Ancient industries and arts are rapidly perishing before the advancing flood of alien civilisation. We must therefore be prompt to study whatever is still extant of early ethnological value, and should all the more cordially welcome the opportunities afforded by this instructive Exhibition.

Our chief difficulty in the way of doing a large amount of valuable work in these conferences is due to the narrowly limited time at our disposal. Its best distribution appears to be that which we propose to adopt, namely to hear in this room from gentlemen connected with the ethnological exhibits a brief

account of the most typical specimens, together with any other ethnological remarks they may wish to make, and afterwards to disperse to the several courts alluded to in the conference of the day. There we shall hear further explanations, which I hope will be prolonged until six o'clock, so that each of us may be able to go from court to court in what order we please, while the risk of too great a crowd at any one of them will be lessened. A methodical plan for the visit of a succession of parties to the courts in turn seemed impracticable. The adjournment from this room will take place at five o'clock. We must therefore dole out the hour before us in sparing allowances, in doing which the gentlemen whom we shall have the privilege of hearing have kindly concurred. Only twenty minutes altogether can be given to the Cape Colonies. We shall then proceed with the Western Settlements of Africa, and conclude with a brief reference to the Cyprus collection. I shall not take up another precious moment of your time before we begin with our regular work.

Bantus.

Mr. Webb, of the Cape Colony, has brought to you three men who are members of one or other division of the widely-spread Bantu race. He will point on Dr. Mann's map to the homes of their respective tribes, and he has laid on the table characteristic specimens of Bantu workmanship, including baskets, earthen pots, and some pretty small vessels, chiefly, if not wholly, used as snuff boxes. Some of the old-fashioned retisch objects are also exhibited. As regards dress, the effect of the new fashion of clothing the person is shewn by the ornamented skin of new design which is now thrown over the ancient complete female dress. The sticks they are so fond of covering with ornamentation are now occasionally carved with figures representing white men.

Two of their old-fashioned musical instruments are here. One of these is especially curious, and it is extremely difficult to acquire the knack of sounding it. A strip of membrane, at the end of tightly stretched string, lies over a hole, and the sucked-in air sets it in vibration. The other is a bow with a gourd as a resonator. The string is struck with a stick.

[These instruments were played on by the natives.]

Bushmen.

I will now turn to the half-caste Bushmen, of whose race hardly any pure specimens now remain. I myself, very many years ago, have passed days encamped among them, on the

same journey in which I explored Damara land, that country which has recently passed under German protection, and I retain the liveliest recollections of their too-much-overlooked good points, and especially of their ingenuity, dexterity, and nattiness.

I do not know that their strength, which has been variously estimated, has ever been measured. So for the sake of procuring a solitary instance, I will ask Mr. Webb to persuade the Bushman to exert his greatest strength of squeeze upon the very instrument with which, during the Health Exhibition in these same courts, I had the strength tested of nearly 10,000 persons, and we shall soon see how he ranks among them.

I should say that his height has already been determined to be 4 ft. 8½ in., and his weight, 8 stone or 112 lbs.

[On trial, his greatest power of squeeze with the right hand proved to be 54 lbs., and that with the left to be 60 lbs. Also, his greatest power of drawing, as an archer draws his bow, was 58 lbs.]

It appears from this that the man is barely of the average strength of an Englishman, even when allowance is made for his small weight. An average male sight-seer at the Health Exhibition weighed 143 lbs; his squeeze with the strongest hand was 85 lbs., and his drawing power 74 lbs. At this rate, the half-caste Bushman who weighs 112 lbs., ought to squeeze 67 lbs., and to draw 58 lbs., whereas his performance is only 60 and 58.

REMARKS *on some of the RACES of SOUTH AFRICA represented at the EXHIBITION.*

By the late DR. R. J. MANN.

Dr. Mann, in response to Mr. Galton's invitation, said that the group of Kafirs to which he was asked to draw the attention of the meeting was that which was situated between the range of the Drakenberg Mountains and the sea. A century or so ago it consisted of a large number of small tribes, each under its own chieftain. They could hardly be spoken of as aboriginal inhabitants, as they had obviously migrated from the north in not very remote times. They were practically now distributed into five tribes, the numerous small tribes having disappeared. These were the people known as the Amatonga, most towards the north; then the Amaswazi; next the Amazulu; and finally the Amafonda and Amakoza, being most towards Cape Town. The chief type of these tribes is the well-known Amazulu. It is now a powerful group, as is

sufficiently apparent in the fact that in 1879 20,000 of its armed young men overwhelmed with their numbers and destroyed 1,000 British and Colonial soldiers. The mere overflow of the Amazulu into Natal, in seeking refuge from the barbarous rule of their chiefs, amounts to a native population of 360,000 to 400,000 individuals, residing in Natal under British rule. These are most interesting people to us. They are not so black as the true negroes. They have woolly hair, thick lips, and broad flat noses, like the negroes; but all these characteristics are in a softened form, as if the negro had been mixed with a modifying race. They have, for the most part, high foreheads with an intelligent expression. They present the curious combination of high capacity with a nevertheless barbarous and low state of civilization. The reason for this probably is the small strain which is put upon them by the necessities of life. Their clothes are next to nothing. A small handful of tassellated skins serves for a man. A house costs about a shilling, and food is yielded almost spontaneously by the bountiful climate and soil. The typical objects presented before the meeting—the wooden pillow for the head at night, the sun-baked clay and grass-woven beer pots and milk vessels, the monkeys' tails kilts, the blankets of joined skins, the rude hoes used by the women to scratch up the ground, the stone mills for grinding the mullet, and the beehive-shaped huts of straw shown on the carved model—all point to this fundamental fact. The Exhibition, however, contains a singularly fine and complete illustration of the domestic life of these people, and the peculiarity which has been alluded to will be at once perceived when these are examined. The Executive Commissioner for Natal, and his assistants in the courts, will gladly avail themselves of the pleasant opportunity of pointing out in detail the lessons which are conveyed in this really exhaustive collection of Zulu-Kafir implements and objects.

On OBJECTS of ETHNOLOGICAL INTEREST exhibited by CLEM. D. WEBB, from SOUTH AFRICA.

By C. D. WEBB, Esq.

The following are the principal objects to which attention was directed:—A specimen of the many baskets made by the Fingoes in the Cape Colony, who may claim to excel, and are the most skilful at all this style of work.

Earthenware pots and cups made of clay. The process of manufacture is very simple; the clay is first worked until

soft, and is moulded by the hand into the desired shape: it is then burnt in a hot fire, and when finished the pots are used for cooking, carrying water in, and for keeping milk and beer in. The imported iron pots and china are gradually taking their place. The Basutos excel in the earthenware industry.

Specimens of different kinds of snuff-boxes in common use amongst the tribes of South Africa. One is made from a portion of an ox's horn, with wooden sides neatly wedged together and polished. Another is made from a calabash or gourd hollowed out and having figures of men and animals tattooed and burnt on in a most perfect style. Others are made from a gourd covered with beads of different colours wonderfully well blended, for which the natives have a high reputation. One is made from a sheep's horn, and is fastened to the snuffer's arm; very primitive. Some of the most interesting are in the form of figures representing cattle, sheep, and horses, and are prepared from the inside scrapings of an ox hide. The Pondos are the only tribe who adopt this latter style of box.

A rare necklet made of bones and hoofs of antelopes, and worn by the witch doctors and Fingoe conjurors. In instances where stock has strayed, this necklet is thrown down by the doctor and the position of the majority of bones and hoofs determines the direction in which it is thought the stock has strayed.

A Kafir doll, carried by barren women as a charm, with the belief that the actual carrying and hugging of the doll will ultimately be the means of a child being sent.

A very primitive covering, made from the leaves of the "umkwinti" plant, and sometimes of plaited beads, which a few years back was a complete dress for women, but as civilisation spread, handsomely worked skins and cotton blankets came into use, and these and European dresses are now covered over the old style of dress which is however still worn by some.

The tail of a blue crane, commonly called Kafir crane, worn on the top of the head: none but chiefs of high rank and warriors are allowed to possess these, nor are any permitted to wear them but men of tried bravery upon whom the paramount chief bestows them as marks of his favour. These, bestowed by the hand of the chief, serve instead of the riband, stars, and medals, &c., as eagerly sought for, though not more highly prized, in a higher state of society.

On the NATIVES of the GOLD COAST.

By SIR JAMES MARSHALL, C.M.G.

THE portion of Africa of which I have specially to speak is one of the oldest of the British Colonial possessions, but I fear it remains to this day about the most savage, uncivilised, and uncared-for portion of the empire. I mean the Gold Coast.

It first came under the direct influence of Great Britain in 1672, when the Royal African Company took possession of the coast and built a number of forts along it. This company was succeeded in 1750 by the African Company of Merchants, constituted by Act of Parliament, which in 1821 was dissolved, and the country ruled by the Crown, through the Governor of Sierra Leone. A disastrous war with Ashanti, in which the Governor, Sir Charles Macarthy, lost his life, caused the British Government to transfer its powers back to a mercantile corporation, which continued until 1843, when the Government again assumed the ruling power, and has continued to do so under various forms until now.

In my opinion, the result of this changing and experimental mode of ruling has not been beneficial to the native population as a whole, but has broken down and destroyed what that population possessed in their modes of government and life without raising them to anything better.

The Gold Coast is not a country which can, at all events in our time, be made a colony where Europeans can settle. It must remain the country of the natives, with but a handful of Europeans among them. But these few Europeans have the power by which they rule these people and enforce obedience. And whenever this rule is carried out and enforced according to European ideas, without any consideration of the ideas, equally ancient and equally deep, which pervade the minds of the natives, it may break and destroy, but does not promote any real improvement. It is like a collision between a powerful steam engine and an old-fashioned cart. It might be better for the cart if it could become a steam engine, but a forcible collision between the two, merely smashes the cart.

The handful of Europeans who represent the steam engine are utterly out of sympathy with the ways, customs and beliefs of the mass of the population among whom they are settled, and who represent the cart. The Europeans do not understand them, and therefore are apt to treat them alternately with ridicule and abuse. The natives do not understand European ideas, and are unable to accommodate themselves to those ideas. And so there are constant collisions which cause destruction without

supplying anything better to take the place of what has been destroyed.

My own experience of the west coast of Africa is that that Government has for the time succeeded best with the natives which has treated them with consideration for their native laws, habits and customs, instead of ordering all these to be suppressed as nonsense, and insisting upon the wondering negro at once submitting to the British constitution, and adopting our ideas of life and civilisation.

The most successful Government appears to have been at the time when the British Government, disheartened at the defeat and death of Sir Charles Macarthy in 1824, again handed over the reins of power to a mercantile Government who secured as their Governor Mr. George Maclean, whose rule is to this day remembered and spoken of by the natives of the Gold Coast with affection and respect. He is thus described in the Colonial Office List: "This gentleman, with a force of no more than 100 men at command, and a revenue of only about £4,000 a year, contrived to extend and maintain the influence of his government over the whole tract of country now known as the Gold Coast Protectorate. Here he preserved peace, remedied injustice, and repressed the cruel customs of the native chiefs and priesthood." When the British Government again assumed the supreme authority, Mr. Maclean's influence over the natives was maintained by his being appointed to the office of Judicial Assessor to the native chiefs. I can speak of this office from personal experience as I was appointed to it in 1873, and was the last of the race, as in 1874 all judicial power was merged in a Supreme Court of approved English construction.

As Judicial Assessor I was a sort of head chief, and sat with the local chiefs in Court, hearing causes brought by natives among themselves. By this I learned that a complete system of laws connected with both land and personal property existed among them, which had been handed down by oral tradition from time immemorial, and was better suited to them than our moderate, elaborate, and intricate laws of real and personal property.

Time does not permit me to go into these matters. What I wish to say is that the natives of the Gold Coast and the West Coast of Africa have a system of laws and customs which it would be better to guide, modify, and amend, rather than to destroy by ordinances and force.

So also they have their chiefs, with court forms and etiquette, and their own customs and mode of living which will not be improved by ridicule or by forced abolition.

The result of my own experience is that the way to rule and

improve these native populations is to take them as we find them, making use of what we believe to be good or harmless, whilst repressing what is cruel and unjust.

Anyone who treats these natives with consideration and, as far as possible, with respect for the beliefs, laws, and customs which are theirs, and which have come down to them from their forefathers, soon finds that he gains an influence among them which nothing else will bring him. Instead of starting a steam engine and smashing the cart, get into the cart and ride with the native driver and do what you can to make him improve his cart, so that in time he may prefer the engine and take to it.

Even in their fetish superstitions there is no use treating them as folly. Fetishism is a tremendous power throughout Africa, and cannot be put down by ridicule or contempt. We look at their fetish charms and wonder how people can be so foolish, but these are but outward signs of what is of immense significance to the unfortunate native.

I have no time for more, and will ask you to look at specimens of the native industries which will prove to you that they have a civilisation of their own, however inferior it may be to ours.

NOTE on the AFRICAN TRIBES of the BRITISH EMPIRE.

By JOSEPH THOMSON, F.R.G.S.

CONSIDERING the narrow limit of time allotted to the discussion on the African races of the British Empire, it would have been better—instead of calling upon such as I—to have given more scope to those gentlemen who, like Sir James Marshall, are so well able, from prolonged residence among the peoples in question, to speak with authority.

You ask me to address you on the West African tribes when in truth my acquaintance with them has been but slight. A rapid run along the coast, and an equally rapid trip up the Niger to Sokoto, constitute the whole of my claim to be heard on this subject, and when I further inform you that I was only seven months out of England, you will perceive that I can have had but few opportunities for anthropological research.

Your chairman, Mr. Galton, in his opening remarks, alluded to one subject about which, he said, it would be of special interest to acquire some information. What influence had contact with Europeans had upon the natives of Africa? Had contact been attended with good or evil results? Now this happens to be a subject in which I have always been greatly interested, and

therefore in default of more special anthropological information I will devote what few remarks I have to make to this topic.

Stated briefly, I have to confess, with shame and reluctance, that the opinion I have formed is, that contact with the European in West Africa, has been attended with almost un-mixed evil to the natives. We commenced our intercourse by making them an article of trade, and for nearly four hundred years transported myriads under conditions of untold horror across the Atlantic to a life of shameful and savage treatment. To obtain these slaves, tribe fought with tribe, and village with village, till the land was drenched with the life blood of millions. That trade is over, but the dire effects of it still live and will require generations to remove.

It is now a matter of history that this state of things exists no longer, and we piously thank God that we are not like our forefathers. Now, instead of tearing the miserable black from house and home, we take to him all the blessings of trade, and spread before him the way of salvation. The trader and the missionary in happy union are to heal the great festering sores of our past sins, and through the benign influence of European commodities and the Bible raise him to a higher level of civilisation. As illustrating the results of this new order of things, the flourishing settlements, and the well filled churches of Sierra Leone and Lagos, are triumphantly pointed to. Like most people, till last year I had taken it for granted that here indeed was something being done, of which we as Englishmen and Christians had reason to be proud.

I was, I am sorry to say, only too soon disillusionised by being brought face to face with the facts. In the chief towns I found the people over governed—not wisely but too well. Taught to regard themselves on a footing of equality with the white men, they had become insolent and overbearing. I found that everywhere they were apt scholars of European vices and almost impenetrable to any of its virtues. The “blessings” of civilised trade I only too soon discovered to be complete and terrible demoralisation arising from the prodigiousness of the infamous gin trade—a trade it is true, not marked by the bloodshed and horrid cruelties of the slave traffic—but one which, in its far-reaching and dire results, was working as much ruin and desolation as ever the capture and sale of human beings produced. It is impossible to describe in too strong terms the evil influence of this scandalous business, a business which is driving the already barbarous negro deeper and deeper in the moral quagmire, ruining him soul and body, that a few traders may coin more gold, and live in affluence at home. When I tell you that for every bale of useful articles taken out to the West

Coast of Africa, there are thousands of cases of gin, you will perceive the pernicious havoc the latter must produce, and go on producing, till a cry gets up from the conscience of the nation against the further continuance of this traffic, though how you are to stay the evil appetites you have roused passes my understanding.

Along the whole line of that unhappy continent there rises the cry for more drink—more drink—give us tobacco, gun-powder and guns. Those are the wants roused by a hundred years of European trade, till now the proudest boast of a native village is the size of its pyramid of empty gin bottles as showing how much spirit they can afford to drink.

But you will say that even if all this be true, there is surely a brighter side to the picture. If trade has failed to pursue a legitimate and honourable course, our missionaries must have been true to their calling, and done much to counter-balance the evil influence of the trader. Far be it from me to say that they have not worked nobly in the field and died like Christian heroes by the score in harness in their glorious mission, but if I must speak the truth, I must sorrowfully say that the results have not been commensurate with the efforts and the costs. In West as in East Africa missionaries pursue with astonishing blindness the most impracticable and visionary methods, and expect a Pentecostal awakening from some inherent virtue in the great truths they preach. They hope to graft upon the low undeveloped mind of the negro the highest and the most beautiful conceptions of Christianity, instead of teaching him something that he will comprehend. The consequence is that everywhere Christianity stands baffled before the arrayed forces of fetishism and barbarism.

Nowhere does it come into touch with the native, for the gulf is so wide between the one as presented by the missionary, and the other as represented by the degraded mind of the negro, that till some new mode of lessening the distance between them is discovered, the case seems hopeless. But the missionary never seems to learn, supplied with his spiritual weapons from the theological college and arsenal, he never seems able to adapt himself and his creed to the minds he has to deal with, and so, as is so frequently the case, proves a wasted life.

From a study of these and kindred facts, I had begun to form the opinion that the civilisation of the negro was an almost hopeless task. In East Africa I had seen that the influence of Arab trade and civilisation extending over some hundreds of years, and European trade and missionary effort in later times, had been alike unproductive of any genuine advance, and we

have just seen that four centuries of intercourse with white men on the west coast has only had the most demoralising results. It seemed to me that as we were not making them better, and were certainly in so many instances making them worse, it would be better to leave them alone. With such ideas as these in my head I reached the Niger, and in that famous river basin, in which so many of our geographical pioneers have found a grave, I was destined to take a more hopeful view of the future of the negro.

In steaming up the river, I saw little in the first two hundred miles to alter my views, for there luxuriated in congenial union fetishism, cannibalism, and the gin trade. But as I left behind me the low-lying coast region, and found myself near the southern boundary of what is called the Central Sudan, I observed an ever-increasing improvement in the appearance and character of the native; cannibalism disappeared, fetishism followed in its wake, the gin trade largely disappeared, while, on the other hand, clothes became more voluminous and decent, cleanliness the rule, while their outward more dignified bearing still further betokened a moral regeneration. Everything indicated a leavening of some higher element, an element that was clearly taking a deep hold on the negro nature and making him a new man. That element you will perhaps be surprised to learn is Mohammedanism.

As mile succeeded mile, and district district, on my journey northward to the capital of Sokoto, I was struck with amazement to observe the enormous influence for good, that is being worked by this so much vilified religion and the marvellous acquisition from barbarism and paganism it is making, and how rapidly it is transforming the whole political aspect of Africa north of the line.

On passing Lokoja at the confluence of the Benué with the Niger, I left behind me the missionary outposts of Islam, and entering the Central Sudan, I found myself in a comparatively well governed empire, teeming with a busy populace of keen traders, expert manufacturers of cloth, brass work, and leather: a people, in fact, who have made enormous advances towards civilisation. Under the influence of Mohammedanism, great towns have sprung up which ring with the stirring din of a hundred industries, while morning, noon and evening, with heads bowed to the dust, the unity, the omnipotence, and the omnipresence of a compassionate God are acknowledged. Here is no veneer, no mere form. No extraneous influences bolster up a savage people to the semblance of civilisation. Before the watchword of Islam and the cry, "There is but one God," fetishism and all its degrading rites have disappeared like a

black fog before a healthy heaven-sent breeze. Clearly there is something in Mohammedanism singularly adapted to the negro capacity and the conditions of a tropical existence, and whatever may be said about it in comparison with Christianity, it undoubtedly helps to bridge the gulf which separates the latter from native paganism, and supplies a stepping-stone to a higher life, giving an impulse to the otherwise inert mass of heathendom which, properly and judiciously fostered, may lead in the future to great ends. At present, Islam is moving irresistibly westward and southward, and those who wish well to the native will watch with pleasure this onward march, and wish it success in its crusade against barbarism, and more especially will they pray that it may successfully grapple with the gin trade, which has been our chief contribution to Africa.

On ARCHAIC SURVIVALS in CYPRUS.

By R. HAMILTON LANG, Esq.

MR. HAMILTON LANG said he had been asked by the Chairman to give a very brief description of the survivals of art and customs in Cyprus. His greatest difficulty was to make selections, for nearly all present art in Cyprus is a survival, and, at every turn, in present customs of the island, we meet survivals.

The largest portion of the inhabitants is a survival of an ancient race reputedly far advanced in civilisation when we in Britain were still half-naked savages. With them in Cyprus the hand on the dial of civilisation stopped very shortly after it began to move with us; and it is only now, thanks to the island's becoming a dependency of England, that it is again beginning to move in Cyprus, in slowly measured but steady strides. Nothing has occurred to Cyprus, since the British occupation, so calculated to quicken this civilizing motion as the Colonial and Indian Exhibition. It is the first direct touch between the Cypriotes and the great British public, and the warmth of that touch cannot fail to produce an electrifying influence upon the dry bones which, in Cyprus, have been pulverising during centuries of neglect and oppression.

There are no modern wonders in the Cyprus Court, but the modern things that are there, excepting the handsome map of the Island, are replete with ancient stories. To begin with the implements, you may put your hand upon the plough you see there and realise that it is the same curious implement, without the change of a bolt or a bar, of which you read in ancient Greek

literature, and identical with that which Elisha was holding in Syria when Elijah threw his mantle over him. So, too, the yoke for oxen, the threshing board, and the ox-goad. Again you will see a quaint-looking bullock-cart, which seems to tell us how little has been the progress in such arts in Cyprus during the past two thousand years. The reason is simple. From then and till now the conditions of life and work have remained much the same in Cyprus. The same simple tools, the same home-grown materials, the same unmacadamized tracks, the same primitive isolation of man from the outer world. But the clouds are breaking, and British rule will soon dispel them altogether.

Artistic eyes have been attracted to our exhibits of pottery—strange productions of the potter's wheels which have turned briskly in the hands of the Cypriotes for 2,500 years or more; and it is probably the same kind of wheel in use to-day that it was in the early days of the world's history. Here we have endless survivals, but one only have I time to mention. The potter of to-day at Lithrodonto when he has turned his jug and is taking it off the wheel puts two little dabs of moist clay on the right and left side of the rounded surface, a little above the middle. If you ask him why he does so, he will probably answer, "So my father did before me," and, in truth, the archaeologist will pick you out from a pile of vases disinterred from tombs 2,500 years old, numberless specimens with the same finishing touch, and others of the same age, superior to anything which the modern potter can produce, on which the two dabs represent two breasts, with a female head above them.

When we turn to the works of nature we find that all is *not* inferior. They are imperfectly manufactured, nay, they are even spoiled in their treatment. The wines are made tarry because of the defective manner of fermentation and transport. The grain is rendered unfit for European millers from the primitive way in which it is threshed. The treatment is an unfortunate survival. But in quality there is nothing superior to the hard wheats of Lefca; no grapes superior, and few equal to those from which the Commanderia wine is made; no silk superior to the silks of Paphos for strength and brilliancy, nor any cocoons which yield a larger proportion of silk: no caroubs richer in saccharine matter than the caroubs of Lefcara. This goodness is all survival. These products were as good two thousand years ago as they are to-day. The essential goodness of quality exists, all that is required is to bring it into contact with the science and intelligence of our nineteenth century, and this, I hope, will be the result of the Colonial and Indian Exhibition. A people which were amongst the first in the civilisation of a past age, are capable to rise to the height even of our present civilisation, when

it is brought within their reach and its advantages become felt. In the soil, in the climate, in the insular position, all is favourable for a high degree of material prosperity. An island which, two thousand years ago, had a population which permitted it to send 30,000 soldiers with Ptolemy Lathyrus to assist him in his war in Syria, may again, under the fostering care of England, become a land of plenty and of many, and the home of liberty.

I am to speak of survivals in customs. Here, too, the examples are inexhaustible. Three thousand years ago the people of Cyprus held a festival, during which it was the custom to go down to the sea and bathe. There is still to-day a feast-day on which the peasants of Cyprus go down to the sea and sprinkle themselves with its waters. The first was in honour of Aphrodite, who rose out of the foam of the sea; the second is simply a survival of the ancient custom. In ancient times, upon the death of a Cypriote, it was the duty of his relatives to make offerings of food in honour of the dead, to-day there is nothing to which mourners attach more importance than the offerings of food in honour of the departed; and if the departed one has been greatly loved, year after year, as the day of his death recurs, the poor collect at the door of the house to receive the offerings, generally "burghel" (broken wheat) cooked in butter, which the relatives offer in honour of the dead parent or friend. The evil eye is as much dreaded to-day by the peasants of Cyprus as it was thousands of years ago. Ask a Cypriote peasant how many children he has, he will answer you, "three or four," or "four or five," never a fixed number; for with him it is held to be as unlucky to count objects that may die, as it was for David of old to count the thousands of Israel. There is no treasured child or colt that does not wear round its neck a charm against the evil eye, nor can you enter a peasant's cottage without the eye falling upon the skeleton of a cow or ram's head, or other such object to ward off ill-luck from the abode. Hospitality is a duty, and nothing can be finer than the paternal abnegation of the Cypriote parent for his children. The poorest give away their little all to dower their girls and to share their possessions with their boys when of an age to marry. When all their children are thus settled in life, the parents are contented to live as guests in the home they once owned.

In conclusion, I repeat, nearly all in art and much in customs are still in Cyprus survivals. The Cypriote of to-day is still a counterpart of the man of the past, but I greatly mistake if you do not find it very different at the next grand Exhibition to which His Royal Highness may invite him. The youth who visits to-day many objects in the Cyprus Court will probably, long before his head is grey, have to search for them in museums of antiquities.

JUNE 7TH, 1886.

CONFERENCE ON THE NATIVE RACES OF AMERICA
(WEST INDIES.)

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

The PRESIDENT made some observations on opening the Conference.

Mr. G. H. HAWTAYNE read a paper by Mr. E. F. IM THURN on the Natives of the West Indies; and afterwards spoke on the same subject. Sir RAWSON RAWSON also contributed some remarks.

Dr. J. RAE gave a brief account of the Natives of British North America, especially the Eskimo, and Professor FLOWER joined in the discussion.

An adjournment took place to the West Indies and British Guiana Courts, where Mr. HAWTAYNE described some of the exhibits.

OPENING REMARKS BY THE PRESIDENT.

THE phrase of "Native Races in the British Possessions of America" is primarily associated in most of our minds with the Red Indians in the Dominion of Canada. This is justly the case, because out of the nine millions of square miles which the whole British Empire contains, considerably more than a third part lies within the Dominion of Canada, and all except a small fraction of this was, until quite recent times, the home of the red man. Moreover, their race has played a notable part in the history of North America, it has been, and still is, the subject of a large amount of anthropological inquiry, it has furnished themes to many well-known popular writers. On these grounds, I think I may be permitted to say that few sections of the Exhibition would have been more attractive, not only to the anthropologist, but also to the general public, than one which effectually represented the domestic life, the arts and the usages of the Red Indian. But this view does not seem to have been taken by the Canadian authorities, whose wide courts, though filled with most interesting products, refer almost entirely to the industries of the white man. The whole of the Red Indian exhibits occupy no more horizontal space than would be afforded by a moderately-sized dinner table with a corresponding amount of vertical wall space.

Since there are not sufficient exhibits to serve as a text for discussions about the Red Indians, our hour must be assigned to other races, who fall under the same title of Native Races in the British Possessions of America, and who are well represented in this Exhibition. But before beginning upon these I shall be happy to give a very few minutes to any gentleman who may be disposed to make brief remarks about these temporarily overlooked red Canadian natives. The objects on the table come from British Columbia; they are taken from the exhibits under the charge of Dr. Selwyn, who, unless I am mistaken, regrets the inadequacy of the exhibits relating to Red Indians as much as I do. He is unfortunately unable to be present.

On the RACES of the WEST INDIES.

By E. F. IM THURN, Esq.

THE information at present available as to the red races of the West Indian Islands and of the immediately adjoining mainland is but fragmentary. Certain points have been somewhat minutely investigated, many others have as yet hardly been examined. In trying to piece together from such unsatisfactory data as these an outline of the probable facts concerning the history of these races, I seem to feel myself somewhat in the position of one who lays down a map of a country of which only certain isolated spots are known, of which vast tracts have never been visited. Just as this map-maker, after he has placed on his paper the known points has to draw from conjecture the surrounding country, so I must, on this occasion, suggest the probable connection of the few ascertained facts which I have to tell. Probable and possible are words that I am forced to use frequently but with carefully considered significance.

At the time of their discovery the West Indian Islands were found to be inhabited by red-skinned people of altogether peculiar character. They were the first examples seen by Europeans of the remarkable race of men which is peculiar to the Western Hemisphere. The accounts of the first interviews of Columbus and his immediate followers with these new people in this newly discovered world, are of the very greatest historical—or to use a wider word, anthropological—interest. They raise, surely, in the imagination of any reader, a wonderful picture—a picture of the first meeting of the man of white skin, the product of the social development which had been in rapid progress for long ages in the eastern world, with the man of red skin, the product of the social development which during those same ages,

with far less rapid progress, had existed in the western world. The men of the east thus for the first time visited and saw the men of the west. The mind of the zealous anthropologist is almost appalled at the greatness and splendour of the opportunity which those men of the east then had—and lost.

But those portions of the American race which were thus first discovered in the West Indian Islands, were extinguished with remarkable rapidity. The larger number were enslaved, and with a slavery so cruel that they soon perished. Others lingered on, carrying on a more or less desultory warfare with the white colonists, who flocked from the east into the islands of the west. The history of what was, I believe, the latest instance of active fighting between West Indian colonists and West Indian red men, that in St. Vincent, will be told you far better by Mr. Hawtayne, who has kindly consented to read this paper for me, than I could tell it. The general result of slavery and war has been the almost complete extermination of the West Indian red man. A very few pure-blooded representatives of the race survive in two or three of the islands; and it would be a very good thing if these survivors were carefully examined, and if their number and condition were recorded. A few other people with red blood—so-called black Caribs—are to be found in St. Vincent, and probably in some other of the islands. These are hybrids between the genuine red West Indian and the imported black African, and are of very curious interest. Mr. Hawtayne, with much greater experience, can give you much better information of these people than can I. For my part, I may, however, tell you that these island hybrids correspond exactly with the hybrids, not very rare in certain parts of Guiana and of Brazil, between red men and negroes. In Guiana they are called Cobungroos. Physically, at any rate, the mixture is a most successful one. Finer men, or better suited for life in the parts where their lot is cast, than the Cobungroos of the edge of the forest country of Guiana, it would be hard to imagine. I should like to place on record that it was to one of these people, a young fellow named Gabriel, that I very largely owe my success in ascending Roraima.

The few surviving traces of these extinct island races are naturally of the very greatest anthropological importance. These are chiefly of two kinds, one of which is represented by the few surviving traces of the languages of these races, that is of a few brief vocabularies and of a large number of place-names; the other being represented by the products of the simple arts of these races, the implements of stone, shell, clay and wood.

Concerning the traces of languages, all that I can here do is to remind you that, as regards the Arawak language of the

islands, Dr. Brinton has admirably summarised the little existing information in a paper contributed to the "Transactions of the American Philosophical Society" (since reprinted in pamphlet form), and that a Carib grammar of the 17th century, by a French priest then resident in Dominica(?) exists, and has of late years been reprinted by M. Adam in Paris. I may add that Mr. Ling Roth, who will, I trust, be present at the reading of this paper, has made considerable study of the language of the island Arawaks, and will give you, I hope, more information on this subject than I can. As regards the place-names, I have been for some years collecting them, and I hope soon to publish the information which they throw on the extinct people who originally gave them. To close my few remarks on the subject of language, I may also tell you that I possess the M.S. of an Arawak grammar written by the late Rev. W. H. Brett, a man of great learning on that subject; and that I also possess, through the extreme kindness of my American friends, a M.S. German-Arawak dictionary, compiled during the last century by a Moravian missionary. Both of these latter linguistic materials refer, it is true, to the Arawaks of the mainland, not to those of the islands, but they cannot fail when published, as I hope they will be in due time, to throw much light on the insular languages.

More enduring than the linguistic traces are the implements of stone, shell, clay and wood. Various collections of these, some of considerable extent, have been made, and afford much, at present hardly used, material for study. Foremost should, I think, be mentioned the Latimer collection, now incorporated in the United States Museum at Washington. This collection was brought together by an Englishman, but an American subject, George Latimer, who was for a long period a merchant and American Consul in Porto Rico. It was bequeathed by him to the American nation. It has been admirably described by Professor Otis T. Mason in the "Proceedings of the Smithsonian Institute." Its fault, a fault, alas, common to almost every such collection, is that it carries with it no record of the special place and circumstances of the discovery of each stone. Next, I suppose, in interest among the public collections must rank that portion of the Christy collection, in the British Museum, which consists of the stone implements from the West Indies. While it contains some very interesting examples, it is far from sufficiently representative, and I think I may safely plead with those Englishmen who are possessors of West Indian stone implements to add them to our national collection, which has great need of such specimens. Another public collection, the Blackmore Museum at Salisbury, contains some interesting West Indian examples, the best of which have been described in Mr.

E. T. Stevens's "Flint Chips." Turning now to private collections, among the more interesting of these may be mentioned that of Sir Thomas Graham Briggs, of Barbados. A selection of the best examples of this collection has been kindly lent to me by its owner, and many of them have been figured in my "Notes on West Indian Stone Implements," in "*Timehri*," our Guiana scientific journal. Another portion of this collection fills one of the large cases in the West Indian Court of the Exhibition. Mr. E. A. Atkinson, now of Trinidad, possesses a small but very interesting collection, some examples of which he has been good enough to give me, others he has lent me. These too have been figured in "*Timehri*." Dr. H. A. Alford Nichols, of Dominica, has also brought together a considerable number of examples, the whole of which will be found in the Exhibition. My own collection, which, at least in point of numbers, exceeds any of these private collections, is unfortunately in Guiana, whence special circumstances prevented my bringing it, as I should like to have done, to the Exhibition. Various other small but very interesting collections, are, however, there shown, by M. Th. Rousselot, Esq.

Of these the first should be especially examined.

Time forbids my describing in any very great detail the material thus nominally brought together. I may, however, briefly allude to some of the more interesting features of the collection thus laid before your imagination.

I think there is now hardly any part of the world from which stone implements have not been procured, and it is a platitude to remark that of these certain types occur with wonderful similarity, almost everywhere. Commonest of these is what I have elsewhere described as the "petaloid" type. Its chief representative is shaped like the long narrow petal of a flower, *e.g.*, of a ranunculus. Round this representative of the type may be grouped many more or less slight variations of form. But taking the type as a whole it may be said to be spread universally over the globe. The explanation of this of course is, that implements of this shape are, as axes, adzes, and chisels, tools for the simplest, earliest, and most necessary purposes, and that their form is consequently that naturally first devised by one of the earliest efforts of imagination by all primitive folk, whether isolated or not, in all parts of the world. It is as common in the West Indies as elsewhere, and many examples of it will be found in the show cases of the Exhibition. Some of them will be found to be polished and finished to a very high degree. Especially may attention be called to one extraordinarily highly polished and beautiful example from Antigua, the property of Bishop Branch.

But in the matter of stone implements, as in other matters, if the earliest devised forms of the most primitive folk are the same, or very nearly the same, in all parts of the world, the next, and in increasing degree, all further devised forms are apt to be different in different parts of the world. That is, each folk, starting from a very similar because very simple form, develops for itself, according to its own peculiar surrounding circumstances, higher forms specially suited to its own circumstances. Thus just as it is true that implements of the simplest kind from different parts of the world are of identical form, so it is true that implements of more elaborate kind are, more or less, of distinct and peculiar form in each different part of the world. The type of implement peculiar to the West Indies is very peculiar, I believe I may say unique, and indicates so high an artistic advance that it is a matter of extreme regret that more of the circumstances which led to this advance are not known. I may add in treating of these artistic forms that the materials employed were of various kinds, including not only stone, but also clay, wood, and, though this does not lend itself to much artistic elaboration, shell.

The peculiarity of this West Indian art may not unfairly be described as the application of an unusual elaborateness of sculpture. This was probably first used as a mere means of adorning implements of practical utility. This stage is well illustrated by many examples in the exhibition, of which the following may be especially noted:—

1. One in left hand large case, winged and grooved, thus—



Nowhere else, I believe, but in the West Indies, or possibly on the immediately adjoining mainland, would such a form be found. It is a specially good example of many forms more or less slightly diverging from it, and the whole group thus formed should, I think, be regarded as the most remarkable feature in the history of the West Indian stone age.

2. A large example, in the same case, from the Grenada Public Library, should also be especially noted for the sake of comparison.

3. A form approaching that already mentioned, but perforated, should also be noted. They are fairly common in the West Indies, and there are one or two examples, though no very fine one, in the Exhibition. Its shape is here represented—



That these examples thus described were not individual eccentricities, but represent forms once commonly made, is, I think, shown by the fact that they occur not only in considerable numbers, but of all sizes, from barely an inch long to twelve inches long and more.

But if, as has been suggested, this sculpture was first applied as mere ornament to practical implements, it seems to have been used, probably later, for the adornment of stones, or of other material, for merely ornamental, or perhaps symbolic, purposes. It seems as though the West Indian sculptor ran riot with his art and often wrought an implement, frequently at the cost of what must have been considerable labour, into curious forms apparently impossible of practical use. Before describing some of these forms, which have been described somewhat meaninglessly as "banner-stones"—and the term, in default of a better, is useful—I will just point out two facts bearing on this special matter. The first is that still at the present day the red men of the mainland are very apt when they see a piece of wood of curious natural form—suggesting, say, some animal—to take that wood and, with more or less artistic touches, to complete its resemblance to that animal. It is perhaps worth notice as a curious survival of, or reversion to, this practice that there is at Stratford-on-Avon, a man who has a museum—a "phusoglyptic museum" he calls it—of such natural pieces of wood which, merely by a few touches of art, he has transferred to the shapes of various animals. The second fact to which I propose to refer is that there is another possible explanation than that given above of the historical relation of the West Indian banner-stones to the West Indian practical implements ornamented by sculpture; and this is that the red man first applied sculpture merely by way of amusement to certain stones the natural shape of which suggested some peculiar form to his mind, and that having thus developed his artistic skill, he then only in the second place applied this artistic sculpture to the ornamentation of the practical implements of simple form which he was already in the habit of using. The difference between the two possible theories is merely this: the one suggests that sculpture was first applied to the development, in an artistic line, of practical implements, and then was allowed to run riot in the production of "banner-stones"; the other that banner-stones were first made as an amusement, and the art thus gained was combined with that employed in the production of practical implements.

Leaving the choice between these two theories open, I will now turn to the description of one or two examples of banner-stones.

1. The very essential idea of a "banner-stone" being that it should be of no (unless of symbolic) use, I may allude first to one which fulfills these conditions most perfectly. I have placed a photograph of the stone in one of the cases of implements from British Honduras. Its form is so eccentric and

meaningless as to defy description, and I can only advise those who are interested in such matters to examine the photograph. The original implement is part of the Atkinson collection, but is now in my care. It must have been manufactured at the cost of a very considerable amount of labour. It has been fully described and figured in "Timehri."

REMARKS on the CARIBS.

By G. H. HAWTAYNE, Esq., C.M.G.

There is not much to be said by me in addition to what is contained in Mr. Im Thurn's paper. In the Island of St. Vincent there were and still are, two kinds of Caribs, one the yellow or red man whom the paper just read mentions, and the other a hybrid race a mixture of yellow Caribs with some African slaves who about 1632 were wrecked on the shores of Bequia, an island close to St. Vincent. Quarrels and wars arose between the two tribes, and eventually the black Caribs settled on the leeward or north-western coast, and the yellow on the opposite side of the island. They were formidable enemies to the British, whose army of 5,000 men, led by Sir Ralph Abercrombie and other distinguished generals, had a difficult task to subdue their savage opponents, aided by officers and men of the French Republican army. One of these black Caribs, Chatoyer, was the leader of the rebels. There is an engraving in the West Indian Court from a picture painted for Sir William Young from life, representing this savage chief and his five wives. Their features show their partly African descent, and the women are there represented carrying their loads in sunanas, which are baskets woven from a species of *Maranta*, strung on the back and supported by a band across the forehead, just as the figure of the Acavoi woman in the British Guiana Court is carrying hers. These black Caribs, when African slaves were imported to till the fields of the European planters, became alarmed lest their descendants might be mistaken for those of the servile race, and compelled to labour, and so the practice was instituted of compressing the foreheads of newborn children so as to distinguish them from pure Africans. This custom, however, has long died out, but skulls are to be found with receding foreheads thus caused. The Black Caribs inhabit a small tract of land near the foot of the Soufrière Mountain granted to them in 1805. They are excellent boatmen and live by fishing. They also make a few baskets of neat workmanship. In 1879 the black and yellow Caribs were said to number 431, but of these several were not of pure blood. In 1735 they were estimated at 10,000, but many were killed in the war of 1795-6, and upward of 5,000 were transported to Ruatan in the Bay of Honduras. The prisoners of war were, however, first sent to a small island near St. Vincent, called Balliceaux, where

several died, and where many graves containing their remains with fragments of pottery and shells still exist. Moreover, a good many of the Black Caribs were alarmed at the eruption of the Soufrière volcano in 1812, and quitted St. Vincent for Trinidad.

The axes, or stone implements, are found in great number in St. Vincent, Dominica, Grenada, and other islands. They are supposed by many to be "thunderbolts," and this arises possibly from their being found after a storm when the tropical rains wash away a portion of the surface land and expose these relics buried but a few inches beneath. They are still made in the far interior of Guiana.

The stone from which they are manufactured is of two or three kinds. The fine green description from which the smaller and keener edged ones are formed does not exist in St. Vincent. It may be, as Mr. Im Thurn surmises, that this stone material was brought from some distant place as an article of barter amongst the Caribs.

Various forms of these stone implements are found throughout the islands and Guiana, and I may mention that some years ago I obtained in St. Vincent a stone implement about the size and shape of a peach but as it were pinched up at one end into a thin ridge, which was perforated with a small hole. This specimen was the only one of the kind I had ever seen, until when taking it to the Christy Museum, I found some exactly similar among the Scandinavian stone implements, and which were supposed to be used as sinkers by fishermen. This will show how widely these stone weapons and tools are distributed.

There is in the New South Wales Court one shell implement found in Duke of York's Island closely resembling the Barbadoes type, which is another noteworthy instance of distribution. The stone implements in the same case resemble those found in the West Indian Islands and British Guiana. They are, however, termed tomahawks, for which there does not appear sufficient authority.

One article of purely Carib manufacture to be seen in the British Guiana Court is the matapie, a long bag or sac woven from the rind of one of the Maranta tribe. It is so made as to become constricted when pulled longitudinally, and is used to press out from the grated root of the cassava, or manioc, the poisonous juice. The Acawoi woman already mentioned is seated on a lever by which downward pressure is sustained on the matapie, which is suspended from a beam. This appliance is also found in the West Indian Islands, and in St. Vincent is known by its French name, coulèvre.

A gentleman who recently visited the British Guiana Court informs me that a similar utensil is or was used in Fiji to squeeze out dye from a plant, but that the basket-work was so constructed as to be twisted in contrary directions when pulled, so that the vegetable mass enclosed in it was wrung instead of being simply pressed.

The implements found in Barbadoes are for the most part made from the centre of the conch shell, probably because that island does not contain any hard stone.

Of the Carib language little was known to the black Caribs of St. Vincent of twenty years ago, when the numerals after five were the French six, sept, huit, &c., and the names of certain things, as knives, guns, &c., were also given in French patois.

Interesting results would probably follow a systematic exploration of the graves of the Caribs at Balliceaux. Some years ago I made a hasty examination of one, but the bones in it were all in small fragments. Conch and other shells abounded, and I obtained several pieces of pottery, chiefly masks, rudely formed, and which appeared to have been the ears or handles of earthenware vessels. At Battewia, a neighbouring island, there is a large cave in which a wooden seat or stool was discovered, and no doubt other relics might be obtained there. There is also a Carib cave on the windward side of St. Vincent, at different spots in which island sculptured stones are found. Those which I most clearly recollect are a stone or rock in a field above the town of Barrowallie on the side of which is engraved a human face looking due west, and a large flat rock with the upper surface extensively carved, and which is supposed to have been a sacrificial altar. This is on Rutland Vale Estate, also on the leeward side. At Yambou Vale, on the windward coast, are other remains. A comparison of these rude sculptures or engravings with those found in Guiana would be most interesting.

When going round the cases in the Exhibition, a lady informed me that the "cocked hat" stones resembled closely an implement of hard clay used in the present day in Egypt to remove dried mud from the feet, and marked, as are the stones, on the flat surfaces with lines. This struck me as being very interesting.

I should like to remark in connection with what has been written by Mr. Im Thurn as to semi-lunar ornaments of silver having been given to Chiefs of the Red men, the form of which was presumably copied from stone articles of a similar form, that it is on record that when the Chief of the Black Caribs of St. Vincent, Chatoyer, was killed in the Carib war of 1794, upon him was found a silver semi-lunar ornament with an inscription, which had been given to him by William IV, when Prince William Henry, and serving in the Navy; but this semi-lunar ornament was evidently copied from the gorget then worn by military officers, and of which specimens are common. It may be therefore that the Dutch semi-lunar ornaments spoken of by Mr. Im Thurn were also imitations or adaptations of the gorget formerly worn by military men.

NOTE by HYDE CLARKE, Esq., *Vice-President.*

Among Mr. Borlase's gold ornaments in the West Indian Court, it will be observed that the hand of most of the human figures consists of three fingers, the feet also have three toes.

The same thing will be found in the New Zealand Department.

This is an illustration, among many, of the common descent of all these objects from one system of symbology.

It is found in characters, and can be recognised even now in those of China.

Three is found to be treated as equivalent to the plural.

On Khita (Hittite) sculpture, three hairs represent the mane of the lion, and the same in the emblematic writings brought by Capt. Gill from the Moso district in S.W. China.

In Plate XIII of the Report on Queen Charlotte's Island, 1878, by Dr. Geo. M. Dawson (Geological Survey of Canada) the hand is represented with three fingers, as in the cases cited in New Zealand and Central America. These may be regarded as related to the Pacific regions.

REMARKS *on the* NATIVES of BRITISH NORTH AMERICA.

By Dr. JOHN RAE.

Dr. JOHN RAE being called upon to make a few remarks on the subject of the aborigines of British North America, said that it was too large and important a subject to be dealt with satisfactorily in the very short space of time allowed.

Dr. Rae agreed with the Chairman that it was a pity there was no special exhibit of Indian work sent to the Colonial Exhibition, although there may be seen at one part of the Canadian Court a very considerable quantity of native work for sale. A very interesting collection of the weapons, tools, pipes, bedding, clothing, &c., used and worn by the different tribes, might have been brought together. The Indians with whom Dr. Rae is best acquainted are those of the wooded country, of whom the Maskegon, or "swampy," Crees form a very large portion, to the south and south-east of the Hudson Bay Territory, whilst the Chipewyans, Dog Ribs or slaves, Slave Indians, Loucheux, &c., occupy the more distant lands to the north-west, in the Athabasca and McKenzie River districts. All of these tribes are more or less docile and friendly, having been treated with much kindness, firmness, and judgment for a number of generations by the Hudson's Bay Company, who have for many years excluded alcoholic drinks from a country more than half the size of Europe, and the officers of the Company have also willingly given up their small yearly allowance, a few dozens of wine and brandy, that the Indians could not have it to say that they took to themselves what they refused to the natives. These Indians make very good voyageurs, either in summer in boats and canoes, or in winter on snow-shoe *journées*. They are found to be trustworthy and obedient. In summer it is desirable to employ them, as they are thus prevented killing fur-bearing animals when

out of season. They get well paid and well fed whilst so engaged, and thus earn some means to purchase supplies for winter. Many of these northern Indians have an unfortunate habit of destroying all their property on the death of any near relative, and thus they are kept very poor. I saw several cases of this during the few years I was on the McKenzie. It is rather hard on the Hudson's Bay Company (who have so far unsuccessfully endeavoured to stop the practice) as all the property destroyed may not have been paid for. These northern Indians might tame the reindeer as the "Laps" do, but they think that to do so would bring upon them all kinds of misfortunes. It is difficult to say why the Louchoux living next to, and the hereditary (?) enemies of, the Eskimos, should be so unlike other red men in appearance, manner, dress, and habits. Both men and women are very fine looking; their wealth is in beads, of which the men wear a profusion, tastefully ornamenting their leather garments. They usually carry a *dress suit* to put on in the evening, or on arrival at a trading station. They (*the men*) have their feet compressed when young, but not to such an extent as to prevent them from walking comfortably, and wear immense pigtails, a custom which the Hudson's Bay Company's people are gradually getting them to give up, as by a great addition of fat, feathers, &c., these tails become offensive and very heavy. The children are carried in cradles differing from those of any other native tribes.

Some persons seem to think that the Eskimos live outside British America; this is so little the case that about 4,500 miles of the northern boundary of the Dominion of Canada are frequented by these interesting people, who in Dr. Rae's opinion, bear evidence of a previous state of civilisation, especially in their kind treatment of their wives. Dr. Rae also thinks that the Eskimos came from across Behring Strait from Asia. Their traditions and many other things point in that direction, and they are in no way related to the ancient cave men of Europe.

Professor FLOWER said that his investigation into the physical characteristics of the Eskimos led him to agree entirely with Dr. Rae's conclusions derived from other sources. He looked upon the Eskimos as a branch of the North Asiatic Mongols (of which the Japanese may be taken as a familiar example), who in their wanderings across the American continent in the eastward direction, isolated almost as perfectly as an island population would be, hemmed in on one side by the eternal polar ice, and on the other by hostile tribes of American Indians, with whom they rarely, if ever, mingled, have gradually developed special modifications of the Mongolian type, which increase in intensity from west to east, and are seen in their greatest perfection in the inhabitants of Greenland, at all events in those in which no intercrossing with the Danes has taken place. The typical Eskimo is one of the most specialized of the human race, as far as cranial and facial characters are concerned, and such scanty remains as have yet been discovered

of the prehistoric inhabitants of Europe present no structural affinities with him. Similar external conditions may have led to the adoption of similar modes of life, but this is a very unsafe test of race affinity. There is therefore little or no evidence to justify the assumption that the present inhabitants of the northernmost parts of America are the descendants of the men whose rude flint tools found in our drifts and caves excite so much interest and speculation.

JUNE 22ND, 1886.

CONFERENCE ON THE NATIVE RACES OF
AUSTRALIA.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

Mr. J. BONWICK read a paper on the Native Races of Australia, upon which Dr. AHEARNE made some remarks.

The PRESIDENT described and exhibited some objects from the New Guinea Court, and a large number of objects from Australia were described by Mr. BONWICK.

The AUSTRALIAN NATIVES.

By JAMES BONWICK, Esq., F.R.G.S.

The short time allowed for this paper compels me to give only a brief and popular description of these aborigines.

Their *physique* demands the first enquiry.

In colour they are dark, but not quite black; Europeans, as it is well known, may contract pigmentary stains in certain pathological states. An odour, somewhat resembling that emitted by a goat, has been detected. If not stoutly built, there is no deficiency in height. The shoulders are rather narrow, and the strength is reputed below that of the English. The breast of the female is pendulous in early motherhood.

The base of the trunk differs from that of Europeans. The greatest distance of the iliac crests is relatively less. In narrowness of the basin, the native's pelvis is more like the negro's, and in its extreme narrowness suggests a relation to the ape family. The arms are longer than in any other race. In 50 Australians the forearm varied from 17 to 19½; in 50 English, 17 to 18½. The leg measurements, 17 to 20 in the whites, gave 17 to 22 for the others. In the woman, the leg is longer in proportion than with her native husband.

The hair, which is cylindrical, is not woolly or tufted as in Africans, or even as it was in the departed Tasmanians, though more or less curly, and always coarse. Often thick upon legs and arms, it is but sparsely scattered in the flowing beard. The cicatrices on shoulder and breast are tribal marks.

A pyramidal shape of the head has been compared to that in old Gaulish reindeer-hunters and the boat-headed Brochmen of ancient north-east Scotland. The Australian head is more narrow than broad. A massive brow makes the forehead appear retreating, though often high, broad and convex. In the Western Australian Court, possessing the best native Australian exponents, a remarkably thick skull may be seen. The facial angle is variable. A retreating, feeble chin distinguishes all. While the mouth is large, the nose is flat, and repeatedly greater in width than length. Prognathism is pronounced. Teeth are powerful, well enamelled, with large crowns.

They who accept the evolution doctrine as applied to the physical origin of man, regard the Australians as, in some respects, nearer than most existing peoples to the anthropoid apes. Many atavic reminiscences, or ancestral marks are distinguishable. In the soft parts, brown stains are noticed, as in negroes and the anthropoids. The lobule of the ear is more or less attached. There is a general uniformity of colour. The dental arch is of simian appearance. The first upper pre-molar tooth is stronger than the second, the lower molars are often equal in size, as in the chimpanzee, while the size and number of cuspides or points on the molars are ape-like. The form of the alveolar arch of the upper maxillary, and its prognathism, may be styled pithecoïd. The retreating chin, narrow thorax, long upper members, contracted palm of hand, small skull capacity, narrow pelvis, and platycnemic or flattened bone of leg, are all supposed relics of transitional humanity. Australian females show more of these lower signs than males. In Bulwer Lytton's "Coming Race," woman is to be pre-eminent, physically and intellectually, over man.

The origin of the Australians is doubtful. Believers in the existence of distinct evolutions of man, in different localities, cannot consider Australia a suitable birthplace, inasmuch as animals leading up to man are wanting there. A vacuity appears after the ancient order of marsupials.

Man came to Australia as an immigrant, and was not of indigenous growth. He may have come before depression removed intervening bridges from other lands. The visitors, in all probability, found other inhabitants there. Tasmania, New Guinea, Timor, New Caledonia, Borneo, New Zealand, attest the presence of a very ancient, dark skinned, rather woolly-

haired race over a large area, anterior to the insular formation of those parts. As the immigrant Maories absorbed or destroyed such aborigines in New Zealand, so only here and there can the old type be detected now in Australia.

The occupation by Australians, though to be reckoned by thousands of years, must have been subsequent to the separation of Tasmania from New Holland, as only the primitive race, not any Australians, were to be seen in the little Isle of Beauty. It was also subsequent to the depression isolating New Guinea.

As the dark hill-tribes of India were ages before the advent of Hindoos proper, and as important geological changes have occurred since man first came to Britain, when no English Channel existed, when mammoths and cave bears roamed in our vales, we may be sure that the history of Australian natives, since they left the ancestral home, must cover a vast period of time. Admirers of old families should surely respect a people of so great an antiquity.

Why were the Australians so long unknown to civilised nations? Neighbourly Malays found nothing to attract them in trade. Spaniards, Portugese, and Dutch were equally content to withhold from settlement. This want of contact with superiors accounts for much unprogressiveness, and an ignorance of metals. But if civilisation be connected with government, established rules of conduct, and conceptions of something beyond material existence, the people had a sort of civilization. Not indebted, as were Western Europeans, to foreigners for knowledge of arts, what advance there was might be regarded as an evolved one. There are to be seen there no remains of a prior state of progress, or of even the temporary sojourn of a higher race.

On the other hand, freemasonry, mysteries, circumcision, and other rites would seem to demand former contact, at ever so remote a period, with superior persons. Did the earliest Australians bring some light from lands now, perchance, sunk in the ocean?

Civilisation is ever insignificant among hunting inhabitants. There were no native animals in Australia to raise men to the pastoral stage, and where even European settlers found nothing indigenous worthy of cultivation as food, a native farming population could not be expected. The Australians were hide-bound, from a civilisation point of view.

The arts can be represented by a few simple contrivances. Rude carvings on rocks or weapons, rude sketches in ochre upon rocks or bark, illustrate a far inferior artistic power to that of the long extinct tribe of Gaul, which has left us those clear scratchings to depict hunts after reindeer and mammoths.

Fancy articles are to be seen in several Courts; as tassels to

women's bags, head-sticks prettily circled by their cut shavings, shields adorned with parti-coloured curves, and various ornaments worn at corrobories made of feathers, fur, and human hair. Native persons were gaily got up in colours, arm and leg bands, necklaces of shells, seeds, or teeth, girdles of bark, fur, or hair, on festive occasions.

Manufactures are in bags of grass, bark and string, dishes of bark, spoons of shell, head pads of fur or hair, nets of string, rope of plaited string, bone hooks for fishing, skin cloaks sewn with kangaroo sinews by bone needles, rude attempts at spinning on a couple of sticks, water bags of bark or grass, digging sticks, message sticks, and weapons.

Hammers, chisels, and tomahawks are stones, sometimes ground to an edge, fixed by gum and cord on a cleft stick. The spear or boomerang arrests the kangaroo or emu, the stick brings down the bird, the spear, hook, and net procure the fish. Sometimes the man watches for his prey with uplifted spear, crouching or standing still in shallow water, raising his head occasionally for air.

Force, if not much needed with the harmless animals of Australia, is exercised in tribal wars. Australians and Europeans alike have ideas of patriotism confined by certain territorial boundaries; inside of which are friends, outside are foes.

Spears of wood, with points hardened by fire, have sometimes barbs of jagged stone, or, since European occupation, broken glass or nails. Clubs are of various sorts, from simple knobbed sticks to formidable wooden weapons with a sharp edge, curved or angular. The wommera or throwing stick receives the spear, accelerating its motion, and straightening its course.

A few boomerangs, chiefly employed in striking birds, are so constructed as to perform spiral revolutions in flight and return to the thrower after gaining their object. No boomerang was used in Tasmania, though known in Egypt. A gradual transition has been detected from the club to the boomerang, which is often a formidable weapon.

Clothing, of skins, is rarely used by either sex, except in wet or cold weather. Nakedness is no shame with them. As a French traveller once remarked to a lady, "With a pair of gloves you could clothe six men." A fall of emu feathers, or tassels of skin, may be used in particular dances. The Western Australian Court has some singular head dresses. Adornments are almost entirely monopolised by the men; females are content with their natural charms. In his girdle the man carries his weapons and charms.

Household goods are few where houses are but a *lean-to* of slabs of bark, and where cooking is performed by the simple

process of throwing the animal game in its skin on the fire. Bags of bark or grass hold water. Some advanced tribes have rude ovens in the ground. Stones are heated in a fire, placed in the hole in contact with the food, and covered with wet grass and earth for steaming purposes.

Food for the limited population is abundant in wild fruits and roots, in birds, beasts and fishes. Pituri leaves, when chewed, enable the native to travel for days together without suffering hunger. The plant is only found towards the south-west of Queensland. Cannibalism, if not confessed, is an existing institution of remote parts. The eating of the human kidney fat is supposed to increase bodily strength. Water has been their only beverage. No intoxicants, for drinking or smoking, were known among them.

Home life there was not quite the dark scene some pictured. Hunting and play in the day, feasting, dancing, singing and joking in the evening, are the pastimes. Affection is witnessed between husband and wife, parent and child, tribesman and mate. The gambols of little ones afford constant amusement. Chastisement seldom falls upon children. Want of soft food for infants compels the mother to protract lactation to two or three years. Infanticide, abortion, and wife-beating are known in the Australian bush not less than in Europe and America. Morals are neither so elevated nor so debased as in the British Isles.

Women are treated as the inferior, as elsewhere. They look for the lesser game, while men seek the larger. If not the dancers in the corrobory, they are the singers, musicians, and applauders.

While Cupid plays his pranks alike in palaces and huts, he does not leave wild tribes neglected. The girl is the property of her father till ownership be transferred to a husband, as in this favoured country. There may be the promise in childhood, the gift in after years. The old custom of wife stealing is still kept up, though in pretence, with them, as it was till of late with us, now only surviving in the pelting of the robbing bridegroom with slippers by the lady's friends. As late as 1688 a party of Highlanders carried off by force a number of Aberdeen damsels. Polygamy can be seldom practised, as women are fewer than men in the Bush.

Marriages may be contracted in the tribe, but not in the same family or special class, in or out of the tribe. Bishop Salvado, of Western Australia, records the complexity of arrangements as to intermarriage in the six tribal families near him. In the north-west the Kimera and the Paljari may intermarry. While the child of a Kimera man and Paljari woman is a Boorungnoo, that by a Paljari man and Kimera woman is a Bannighu. The offspring of a Boorungnoo man and Bannighu woman becomes

again a Kimera, when that of a Bannighu man and Boorungnoo woman is a Paljari.

There is no marriage ceremony, no wedding trousseau, no kiss, and no honeymoon. It is usual at a certain season for all men to leave their wives together for weeks, going off to a distance by themselves.

Sickness is met by kindly attention, by charms, surgical appliances, medicinal herbs, local poultices, and medicated baths. The vulgar means may be as efficacious as the supernatural. Death occasions the break up of a camp. The body, doubled up, may be buried in a shallow grave, set up in a tree, or laid upon a rude platform. Sometimes it is burnt to ashes.

Australians were commonly thought religionless. Words have been considered to imply a Creator. Traditions are told of a great old man in the sky, with a family of sons, but no lubra or wife. A well-meaning missionary once fancied he detected in their language notions of Trinity and Redemption, Heaven and Hell.

There is no doubt that they believe in spirits. Like the Jews of Gospel days, they held that bad men could become bad spirits or devils to plague the living. Charms, in potent words by a suitable person, could drive out the devil-cause of sickness. After death, it was thought men would go to the land of souls, where baby ghosts are stored before being wanted here. In dances and traditions there is an idea of a resurrection. At man-making in one place the lad is buried in dust, and jumped-upon, then suddenly dragged out amidst a shout of tribal joy. He was dead, and is alive again.

They are not insensible to Christian teaching. Missionaries complain less of their stupidity than of inconstancy. They accept readily, and forget readily. Every Australian colony has had its missions, under various religious denominations, and always well supported by the State. The Episcopalian Protestant and Roman Catholic Churches, Presbyterians and Baptists, Wesleyans and Moravians, English and Italians, Germans and French, Scotch and Spaniards, have tried to raise these people. The Moravians have been latterly very useful in Victoria. The two youths here present are from their excellent school.

In Western Australia is the celebrated New Norcia Mission of Spanish monks, founded, amidst poverty and trial, by Fathers Serra and Salvado. The latter, now a Bishop, continues his admirable labours. It is not all lessons and preaching there, but plenty of music and play. The mission cricket eleven lately beat the English club at Perth, and could have astonished us at Lord's. The native community there own sheep and cattle,

vineyards, and cornfields, are vocalists and instrumentalists at church services, and are taught painting, telegraphy, &c. The monks work with the blacks, and win them by sympathy, while never neglecting heart training. A prohibitive cordon is drawn around the extensive estate to keep whites at a distance. Already one sign of decadence is seen in the paucity of births. The end is approaching.

An English missionary upon the Murray, where the natives have long mixed with our people, has lately published a collection of letters written by his converts, as evidence of his successful teaching. One aborigine wrote thus to his fellows:—"I know something of what hell is like. When I was a boy I fell into a big corrobory fire, and was badly burnt. I've been in the fire. I know what that is. I believe that hell is far hotter." The missionary is sadly tried by drunkenness and debauchery at his station, and mourns over the decrease of scholars.

Civilisation and religion have advanced for a time. But the ploughman tires, and takes to his hunt again. The scholar becomes a drunkard, or enters the Native Police. The convert lapses, or dies. The race, as a race, is not rising. All surroundings are too much for the man. The weight of our civilisation crushes him. To mix with his own, to marry in the tribe, is to be degraded once more. To dwell with Whites is to receive ridicule, not brotherhood. Well educated girls have gladly fled for love from a civilised home to the native camp. The heart has often vindicated its claim over civilised proprieties.

In their intelligence, Australians have been deemed lower than most natives from their having no knowledge of metals, not comprehending numbers and time, not being inclined to till the ground. And yet, apart from their quick perception and skill in hunting, the aptness of some, at least, to acquire European learning, shows that they are improvable.

The adoption of their fathers' creed is no direct witness of racial inferiority. Many Englishmen rejoice to follow old times, and boast of their consistency in unchanged opinions. They seek no light, want no light, and refuse the light as much as the poor Australians; though, fortunately for them, favoured with ancestors who had been willing to listen and change.

Abashed and confounded by the obtrusive knowledge and power of Europeans, as the roused bat would be when suddenly thrust into sunlight, the aborigines have been hastily misjudged. Englishmen who know their speech have a good opinion of their intelligence. In some mission schools the percentage in examinations has been remarkable.

The *Talking or Message Stick* is, at any rate, the beginning of a written code of thought. As several of these sticks are to be

seen in the Western Australian Court, it is sufficient to say that notches, scratchings and sketches made upon them have a definite meaning to those taught the signs. If not up to the standard of Peruvian quippas or Egyptian hieroglyphics, they serve to tell their tale.

Australian languages have been esteemed variations from one original tongue, or a crossing of flexional and monosyllabic speech. There is in the East much of the agglutinate. Reduplicatives, though far fewer than with Maories, are not uncommon. The phonetic system is much the same all over the island-continent. Some have considered the consonants *g, b, d* not primarily belonging to the language, and occurring only as a transformation of *r, t, c, p*. Most words are written with *a, e, i, o, r, l, m, n, gn, p, r, t, w, y*.

Western Australian is less flexional than Eastern. The phrase is composed of successive roots as in Siamese. In South Australia is seen the transition from the agglutinate to the flexional. Opinions differ as to grammatical construction. One missionary found 15 voices, 6 tenses, and 8 participles in a single dialect. Mr. Protector Moorhouse, of Adelaide, saw no auxiliaries, and declared all verbs attributives. As the first and second personal pronouns are so similar all over Australia, he supposed, as he once told me, that a single pair formed the earliest inhabitants of the continent. Pronouns are most crude, least flexional, and more Turanian than Aryan. As may be expected, there is a great want of words to express abstract ideas. The dual is known. Numbers are simple enough. A hand expresses 5, two hands indicating 10. With some dialects, names are given to the 5; others make 4 by repeating 2; and those with only two words for numbers join 1 and 2 for 3. Tally sticks, with notches, are sometimes now employed.

Intelligence can be gauged by current beliefs, though views cherished by one party may be only idle superstitions to another. Australian natives are derided for believing in demoniacal possession, still accepted throughout Europe and America. Condemned aboriginal magic is honoured among ourselves as animal magnetism and clairvoyance.

Wizards claim the precious gifts of healing and inflicting diseases, causing rain and thunder, aiding friends and destroying foes, suddenly transporting themselves to distant places and assuming foreign forms, foretelling future events and knowing the hidden past, conversing with spirits of the dead and utilizing supernatural beings. A healing wizard sucks out the disease, in the form of a stone or bone cast by malignant demons. To expel a devil requires a proper formula by a duly qualified operator. Magic sticks, crystals, or bones, and the

whirling round of magic boards by means of a string are aids to native wonder-workers.

Some thrust subjects into a deep sleep, hypnotize them so that they call a spade by any other name than spade, see visions, and reveal secrets. A man wills a death, and the patient gradually wastes away. The possession of a hair from the body expedites the magician's art. Some black seers command the elemental spirits, fetch back the departed soul of a person, and bring ghosts visibly to camp fires. They can invisibly ride upon the spirits as easily as a witch on the devil's broomstick, and cause them to speak in native language.

The seers are devout believers in their own powers, which, in most cases, fell upon them in dreams by spirit agency. They supplement spiritual endowments with arts acquired from aged magicians. Extraordinary powers decay, or are lost by drink and social disorganization, in some quarters where even the demons have retired before the stronger forces of modern civilisation.

Magic is useful in affairs of the heart. By it a girl is enticed from the camp fire to her secreted lover, while parents are being lulled to sleep by a charm. But friends engage then another professional to throw a spell over the legs of the runaways.

The *Jump-up-Whitefellow* idea, or reappearance after death in white guise, is a rude confession of the Resurrection. A supposed likeness to the beloved departed has saved lives of shipwrecked or wandering whites among savages. In Mr. Hayter's charming story in verse, "*Carboona*," a young girl, who had lost her lover in battle, recognised in the wild white man, Buckley, of Port Philip, her returned betrothed, and henceforth called him her lord.

Young-men-making is attended by mysteries, some of a phallic kind. The lad was maimed, got a new name, received a sacred stone, heard solemn secrets, was adorned with a girdle of human hair, and, by breathing and imposition of hands, was made one of the initiated.

Circumcision, or some such artificial deformity, is known at the Sound, the Bight, the Gulf of Carpentaria, South Australia, but rarely eastward, and was never seen in Tasmania. Practised several thousands of years in Egypt, adopted by Jews, Mahometans, and many oriental Christians, favoured by sun worshippers of antiquity, it seems strange to find that it existed among isolated Australians.

Native dances are full of mysticism, suggesting ideas of creation, spiritual influence, and the life to come, while telling of serpent, sun, and phallic worships.

Freemasonry was noticed in the interior by an explorer. An old man put right knee to right knee, breast to breast, giving hand

tokens. On these being returned by the English mystic brother, expressive approval followed.

However, and whenever, in the past these several institutions arose, their very existence does not mark Australians, as some affect to believe, but little removed from the monkey or dog in their intelligence.

The *rights* of aboriginal peoples have been questioned. Unimproved land, say many, should be appropriated by those who will use it. This law applies only when whites are strong and blacks are weak, not between whites themselves.

Supposed outrages by native trespassers were duly succeeded by supposed acts of justice. The speared bullock was revenged by shooting anybody of a tribe. New comers assumed that the natives were British subjects, less for the purpose of their protection than for justification in hanging them. Tribal laws were scornfully ignored, and unknowable English ones took their place.

Any evidence of a native was legally valueless against a European. Though ill-treatment of lubras excited natural feelings in husbands and fathers, the personal injury of a white was often the cause of the slaughter of many blacks. In 1849, when at the home of the gentle and brave Captain Sturt, I heard him say "Thank God! in all my explorations I never caused the death or suffering of a single native."

Our aborigines being always in the hunting stage were never numerous. Children were few, and often died early. North Australia, in parts unoccupied by us, has the strongest tribes.

The *decline* of the race is not a little owing to the loss of native rights, the break up of tribal order, and that introduction of our nineteenth-century habits, which only resulted in the foresters' acquirement of our vices. Strong drink has been their chief foe, and greatest means of destruction. One imported disease has desolated the tribes, arrested births, crushed out self-respect, and hurried the shamed and despairing to death. British law made but feeble efforts to repress evils, and tender-hearted colonists witness with helpless dismay the sad disappearance. A German, who had a mission for twenty years, once said to me, "It broke my heart to stay any longer there."

Only a few miserable remnants of powerful tribes linger on in dirt and drink. All the Tasmanians have gone, and Maories will soon be following. Pacific Islanders are departing childless. Australian aborigines as surely are descending to the grave. Old races everywhere give place to the new. Are we, British people, after the *survival of the fittest* doctrine, to be some day supplanted by a more overwhelming or more cultured race?

JUNE 29TH, 1886.

CONFERENCE ON THE NATIVE RACES OF NEW
ZEALAND AND THE FIJI ISLANDS.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

Mr. F. W. PENNEFATHER read a paper on the Natives of New Zealand, upon which Sir JULIUS VON HAAST made some remarks.

The Hon. J. E. MASON read a paper upon the Aborigines of Fiji, and exhibited a number of specimens of native workmanship.

Mr. W. C. DEVEREUX and the Rev. G. BROWN joined in the discussion.

On the NATIVES of NEW-ZEALAND.

By F. W. PENNEFATHER, Esq.

I do not think it necessary here to enter into the question of the origin of the Maori race. It has been so frequently discussed, and so many works have been written proving, at least to the satisfaction of the authors, that they are descendants of the ancient Mexicans, Hittites, Israelites, Malays, and Aryans, that no useful purpose could be served by either reiterating old theories, or inventing new ones. I will merely say that what must impress every traveller is the great variety of type and colour which they exhibit—a strong argument for supposing that they are a *mixed* race; and that wherever they really came from, they are certainly not aboriginals; and, therefore, even if it be a law of nature that aboriginals must fade away and disappear before the white man, that can have no bearing on the present question.

So closely are the New Zealanders allied to the brown-skinned inhabitants of the islands nearer to the Equator that, to quote the words of Mr. Sterndale in the report presented to the New Zealand Government in 1884, when speaking of the various branches of the great Polynesian family, "Their language is so far identical that they readily understand one another without the intervention of an interpreter. Their social customs are analogous; their traditions and habits of thinking are the same. They have but one ancient name whereby they distinguish themselves from the rest of humanity—*Maori*."

It is impossible to state, with anything approaching accuracy, the numbers of the Maories who were in New Zealand in the early days of the colony. There are reasons to believe that the early settlers over-estimated them. The parts of the country first occupied by Europeans were, as we now know, just those where the native population was densest. Information was, in many cases, derived from the chiefs; each of whom, with the same feeling of pride as that which actuated the Scottish chieftains of former days, was anxious to represent his tribe as being as numerous as possible.

It is conjectured that fifty years ago the Maories in New Zealand amounted to about 80,000; in 1858 to 56,000; at the present time there are not more than 35,000. The principal causes of this lamentable decay are *drink*; *diseases*, both infectious and contagious; *European clothing*, which has been substituted for the old waterproof mat; *peace*, which has not only deprived them of what was at least the healthy and manly occupation of fighting, and was to a Maori the principal object in life, but also has induced them to leave their old fortified villages on the hills and live in damp swampy ground near their potato cultivations; and *wealth*, which produces idleness—a curse to any race, but doubly so to an uncultured one.

The history of the Maories naturally divides itself into three periods; first, from their arrival in New Zealand until the immigration of the Europeans; secondly, from that until the end of the war; thirdly, the present time. The peculiar arts and customs of the uncivilised Maories can be explained better in the New Zealand Court, amongst Dr. Buller's collection of curiosities, than in this room; the period of the war is now happily only a matter of ancient history; I shall, therefore, proceed at once to consider the condition of the race in the present, and their prospects in the future.

Now all are agreed that the objects to be aimed at are to promote the advancement in civilisation of the Maori race, and to arrest their decay in numbers. Various means have been suggested. It has been argued by some that the proper course for the Colonial Government to take is to encourage their independent nationality—to allow them to advance towards civilisation in their own way, without forcing them to become sham Europeans. Some, on the other hand, declare that if the natives were only treated in precisely the same manner as Europeans—if there were no special laws as to native lands, for instance—the whole difficulty would disappear. I believe that such views can only be put forward by those who have not studied the question, which appears to me increasingly difficult, if not insoluble. It must be remembered that the

Maories are divided into tribes which have attained to very different stages of civilisation. Without speaking of the South Island, where the natives do not amount in all to 2,000, and are scattered about in small settlements amongst vastly preponderating numbers of Europeans, even in the North there is no one body of natives. The important and prosperous tribes to the north of Auckland never joined in the "King" movement. To force them to submit to it now would be unjust in the extreme. Others, on the east coast, have long ceased to recognise the authority of the King; some again maintain a sort of sentimental regard for him, but would repudiate his interference. In proof of this, I may mention that in January last a large native gathering was held at Hastings, in Hawke's Bay, to consider the provisions of a Bill which was to be introduced into the New Zealand Parliament the ensuing Session with reference to native lands. It was attended by Maories from all parts of the island, with the sole exception of the Waikato District, where the natives are the adherents of Tawhiao, the titular King. The authority of the local chiefs has also died out. It appears, therefore, to me to be an absolute impossibility for the Maories, as a whole, to have a Government separate from that of the Europeans; they may be, it is true, and are, separately represented in the Colonial Parliament; and in those parts of the country where they predominate they could, if they desired, conduct the affairs of the local Government for themselves under the existing statutes providing for the government of counties and boroughs; but anything further I believe to be impossible.

For other reasons also I believe the encouragement of an independent Maori nationality to be neither possible nor desirable. They cannot remain stationary in the midst of a progressive community; they must either advance or decay. The native customs are absolutely antagonistic to progress. Take, for example, the tenure of land. It is tribal; no individual possesses even a usufruct of his cultivation. Who will drain, fence, or grow crops, if he has no security that hundreds may not swoop down upon him to share the rewards of his labour? "In seed-time visitors are few, in harvest they are many," was an old Maori proverb. Or again, instance the old custom of "utu" which still prevails in remote districts. By it, if a misfortune befel a man, such as the loss of a child or a canoe, his neighbours had a right to come to his whare, and seize all his possessions, even his clothes. How can you inculcate thrift to men who may any day be reduced to beggary through no fault of their own?

Turning now to the other view—that if Maori and European

were treated equally the native difficulty would disappear, I can only say that it is a most excellent sentiment, but hard to work out. The land question is the first to confront us. Before land held by native custom can be dealt with in the same manner as that owned by Europeans, the title must be ascertained in some manner or other. We all know how difficult it is to effect a partition of land in this country. But the complications here are simplicity itself compared with the intricacies of Maori tenure. The claimants may be hundreds in number, and the grounds of their claim—birth, residence, gift, conquest, &c.—almost as many. If one tribe has conquered another in former times, the question whether the conquerors have performed acts of ownership sufficient, according to Maori custom, to constitute themselves the possessors of the soil to the exclusion of the original proprietors may be argued for months. Then pedigrees, which are known only by tradition, have to be investigated, and the amount of evidence adduced may be enormous. In a word, if the race is to progress at all, the title to land must be ascertained; for this, special machinery such as that provided by the Native Land Court, is a necessity. No one has yet devised a means by which this process can be other than tedious and expensive.

But even when the title is ascertained, the matter is only brought one stage further on. On what system is the land to be held? If it is awarded to a number jointly, it is inevitable to the legal mind that all the incidents of joint tenancy must immediately attach themselves; and we have the absurd result of English lawyers being obliged to investigate and study a whole series of obsolete black-letter textbooks of the sixteenth century, in order to ascertain the exact legal position of a dozen natives of New Zealand!

Then, if the land is divided into separate allotments, a further difficulty must be faced. The temptation to every native is to sell his share immediately, squander the purchase money in banquets and entertainments, and be reduced to beggary. In the hope of meeting this, restrictions against alienation without the consent of the Government have sometimes been imposed. I do not share the feeling occasionally expressed that this is an unwarrantable interference with the freedom of the natives. But I do confess that the result is not satisfactory. An uneducated man possessing means without occupation is more to be pitied than one who is driven by poverty to spend his days in labour.

What then, it may be asked, do you suggest? I reply that I believe that the only hopes for the race lie in religion, temperance, education, and the inculcation of habits of industry,

for which the abolition of their old communistic manner of life is a necessity. It is a mistake to suppose that even at the time when the Hau-Hau superstition was in full vigour, the influence of Christianity wholly died out amongst the natives. At the present time, in several parts of the country, especially in the northern districts, there is a native Church, with its own ministry, church boards, and organisation; and there is every reason to believe that its influence for good is exercised over a large number. With reference to temperance, it must, I fear, be admitted that for a Maori there is no middle course between drunkenness and teetotalism. No one can regret more than they do themselves the frightful results of drink amongst them. The Blue Ribbon movement has been introduced, and is already bearing excellent fruits. Recently, when the district known as the "King Country" was opened to Europeans for the first time since the war, a petition was presented by the native chiefs and other residents praying that no licence might be granted for the sale of spirituous liquors throughout the district; and, in consequence of their petition, a proclamation to that effect has been issued by the Colonial Government.

Very much has been done in the way of education both by the Government and by private individuals. Native schools are established all over the country, wherever possible and required. The education in these is, as far as circumstances will allow, similar to that in the European elementary schools. The boys take to study and literary amusements with a readiness that is quite surprising; they seem to have a natural aptitude for anything in the way of drawing maps and plans. Then a not unimportant part of the school training of boys and girls alike is the inculcation of habits of neatness and cleanliness which are of vital importance to the health of the race. (I hold in my hand a copy of a reading book issued by the Government Inspector of Schools, entitled "Health for the Maori.") Besides this, outdoor games are played, and everything is done to make the lives of the young people as happy as possible.

For the more advanced pupils also, facilities for improvement are offered. At Te Aute, in the Hawke's Bay District, for instance, there is an excellent college originally endowed with land granted by the natives themselves to the Church of England missionaries, to which youths are sent who have passed through the elementary schools. Such a training is specially valuable either for those who have given evidence of special talent, or those who are owners of property, and who would otherwise be spending their time in idleness and dissipation. The young men from Te Aute sometimes enter the University, or pass into the various occupations in life—proceeding to Holy

Orders, going into Government or lawyers' offices, &c.—or else return to their homes and relations. Some of them I am glad to reckon amongst my personal friends. It is always curious to observe amongst the young men so educated, that although they have the strongest feelings of affection for their own race and home, the break in the history between them and the old uncivilised Maories is absolute. They have totally lost all traditions of their former religion. Native arts—which are still lingering amongst the older generation—have, I regret to say, quite died out amongst the younger ones; if they evince any taste for carpentry (in which indeed they are most carefully instructed at Te Aute) it is merely in the European style, not in the least following the curious and elaborate carving of their ancestors; and, amongst the women, the weaving of flax mats has almost gone out of fashion. The only hope, therefore, lies in inspiring into the race a desire for the more moderate luxuries of European civilisation—comfort in buildings, dress, and habits—which will necessitate labour, either on their own lands or on those of others.

A word as to the position of the half-castes. It has often been urged that half-castes (especially when one parent is an Anglo-Saxon) inherit the vices of both races and the virtues of neither. Such is not the case in New Zealand. Half-castes are frequently strong active men and women and estimable members of society, having in their turn families who are in no way the inferiors of their parents. Indeed, many of those who maintain the view that the case of the Maori race is hopeless, are yet of opinion that for many generations at least their influence will be felt through their half-caste descendants.

For myself, I cling to a brighter view. I feel it to be our clearest duty to do all in our power to preserve a race possessing a history so interesting, and qualities so noble. Not until the prospects of our native fellow-countrymen become much more gloomy than they now are, will I give up the hope that the remnant of the Maori race may yet again take root downwards and bear fruit upwards.

[After the paper was read the Conference was adjourned to the New Zealand Court, where Mr. Pennefather explained the principal native curiosities exhibited, giving also a full account of the religion, customs, and manner of life of the Maories of other days.]

On the NATIVES of FIJI.

By the Hon. J. E. MASON, M.L.C.

In treating of Fiji and the Fijians I feel that however imperfectly I may handle my subject, it will nevertheless prove of interest to many who know little of the 115,000 natives who are in reality British subjects, and also to many others who are unacquainted with the marvellous beauty and wonderful productiveness of the many islands which form one of the healthiest of Her Majesty's tropical possessions.

It may be well, perhaps, first of all to glance hastily at the history of the islands prior to annexation, then at their geographical position, extent and population, and lastly, at the unbounded resources of wealth which may be developed if only the government is in the hands of a capable, broad-minded and unbiassed administrator.

Fiji History.

Fiji was discovered in 1643, by Abel Tasman, the celebrated Dutch navigator. Captain Cook, more than 100 years after, passed through the group, and Captain Bligh in the launch of the "Bounty" sighted the group in 1789, and later on made some remarkably accurate observations.

In the early part of 1800, the first Europeans are supposed to have found their way to these islands. They were for the most part escaped convicts and desperadoes and they naturally exercised great influence among the natives, chiefly by assisting them in the inter-tribal warfare, which for many years appears to have been of frequent occurrence.

About 1835, the first settlement of Europeans was made at Levuka, for the purpose of trade with the natives in cocoa-nut, bêche-de-mer, pearl shell and native curiosities; some pursued their trades of carpenters, blacksmiths, and boat builders, and the settlement gradually grew till, in 1851, a considerable traffic arose between the Islands and the adjoining markets of New Zealand, Sydney, Melbourne, and San Francisco.

As late, however, as 1861, there were only about 160 adult Europeans who were principally engaged in trading with the natives.

From that time, however, settlers commenced plantations of cotton and cocoa-nuts, which up to the present time, have been supplemented with coffee, cinchona, sugar, maize, tea, tobacco, and green fruit.

In 1871, a government of Europeans was started with Thakombau as King. But this government only lasted for about three years, when the islands were annexed to Great Britain.

Geography.

The group of islands known as the colony of Fiji, lies between the parallels of latitude 15° and 22° south of the Equator, and longitude 177° west and 175° east of the Meridian of Greenwich.

The total area is larger than the principality of Wales, and there are about 200 islands in the group, of which 80 are inhabited.

The largest island of these 200 is as large as Jamaica, and six times as large as Mauritius, while the second largest island is about the size of the county of Devon; and the area of the whole colony is greater than the British West Indian Islands.

The total area of the colony is 4,953,600 acres, of which 371,000 only has been alienated, which is only a little over one-thirteenth of the whole area.

There are 128,414 inhabitants distributed over 7,740 square miles, giving an average of 16.59 per square mile, while in Mauritius the average is 533.01 per square mile, and in Ceylon 111.89 per square mile, thus showing what capabilities Fiji possesses for the redundant population of other parts of our Empire.

Many of the islands are hilly and have mountains to the height of over 4,000 feet.

They are composed of the most part of volcanic lava, basalt, and conglomerate, while many are densely covered with forests containing numerous varieties of large and valuable trees.

The colony is essentially well watered; the rain-fall in many places being nearly 200 inches in the year, which serves to keep alive the sources of the many streams that feed the main rivers.

Of these the River Rewa in Viti Levu is navigable for about 50 miles from its mouth, while many others in the different islands prove of great use for internal transport.

The colony has many harbours and roadsteads, but as nearly every island is surrounded by a barrier reef, great care has to be taken in making your anchorage.

The Fijians are considered by many to be purely Melanesian, though in some cases undoubtedly there is a tinge of Polynesian.

The distinguishing peculiarities of East and West Polynesia seem to blend in Fiji and betoken a hybridization of the two races.

They are a tall well-developed people, and they vary in colour from a rich copper to a lightish black, though, in no case do they resemble, either in colour or appearance, the race that is

usually called negro, to whom in form and feature they are undoubtedly superior.

Their language is singularly harmonious, although there are many dialects in the different islands.

In Vanua Balavu (an island to the windward), Fijians are lighter in colour and more developed in physique, owing to a mixture with the Tongan race, who are considered the only race in the Pacific physically superior to the Fijian.

Nature has been so kind in providing the necessaries of life that they are not accustomed to anything like labour, except of a desultory character, in the cultivation of their native foods. They are, however, physically capable of maintaining a system of continuous daily labour like the Europeans, and have proved, when it suits their own interests, to be a most useful class of labourers.

The tide of civilisation, however, which for 10 years past has been flowing amongst them, has not even yet taught them that gift of acquisitiveness which so often prompts the civilised nations of the world in their untiring efforts in agriculture and commerce.

There is, however, very little change in any of their social customs. Since annexation, cannibalism, as you all know, has ceased to be practised, and polygamy which was at one time in vogue among the chiefs is now almost unknown. It requires a scientist to treat of the people anthropologically, and as I am only a planter I refrain from giving you my imperfect knowledge of Fijians from this point of view. I may perhaps mention that man for man they compare most favourably with Europeans in physique and morality, while their intellect is decidedly of a superior character to most dark-skinned races, for a people so lately civilised who were previously addicted to cannibalism and many other vices.

By a census taken in 1881 there were about 115,000 of them scattered over the group in 1,220 villages. Their mode of life is still primitive, and by a wise provision of the Government they are unable to obtain intoxicating liquors, which have been the main cause of deterioration of so many aboriginal races.

That they are capable of a higher development is proved by the adaptability shown in the native Industrial School, where 100 boys from different parts of the group are instructed by skilled European artisans in carpentering, boat building, and other trades.

I must say a word here of the evangelising efforts of the Wesleyan Mission, the Roman Catholic Mission, and the Church of England.

Religion truly may be said to have been the primary cause of

the civilisation of this noble race. In almost every village in Fiji there is a church, a school-house, and a native teacher; while throughout the length and breadth of the group family prayer is a daily custom.

Resources.

I feel that I cannot touch upon the natural resources of this fertile colony without stating that the development of such resources by Europeans cannot take place, either now or in years to come, without the assistance of cheap labour.

That labour in such a country can be, and ought to be, cheap, has been proved by the history of our other tropical possessions.

Premising that labour in the islands will shortly be far cheaper than at present, I have no hesitation in affirming that Fiji from its position, from its climate, from the marvellous fertility of the soil, will prove a second West Indies, and become in time, one of the most valuable of Her Majesty's possessions.

Sugar has already assumed very large proportions, despite the many disadvantages that the growers had to encounter, but this industry in Fiji, as in other of our English sugar producing colonies, has received a check owing to the sad depreciation in value that will materially affect the interests of the Colony.

Cocoa-nuts may be called the staple industry of the natives as well as of many of the whites. The kernel is dried and exported for oil making, and the refuse is used for oil cake for cattle, while the husk is manufactured into fibre which is again manufactured into many kinds of rope.

The climate and the soil are well suited for the growth of tea, an industry which, if pursued to any extent, ought to bring the islands into that prominence which they so undeservedly now lack.

Before closing this brief paper, I should like to draw the attention of those who have honoured me with being present to the fact that in a climate like Fiji it is quite compatible for the European to live side by side with the native in perfect harmony with mutual advantage to both, an advantage to the European in utilising the labour of an inhabitant of the soil, and an advantage to the native in appreciating and gaining knowledge of the comforts with which Europeans invariably surround themselves.

JULY 13TH, 1886.

CONFERENCE ON THE NATIVE RACES OF THE
STRAITS SETTLEMENTS AND BORNEO.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

Mr. SWETTENHAM read a paper on the Native Tribes of the Straits Settlements.

Mr. PRYER read a paper on the Natives of British North Borneo. Sir GEORGE CAMPBELL and Mr. SWETTENHAM joined in the discussion.

A number of Ethnological objects from the Straits Settlements and from Borneo were exhibited and described.

*On the NATIVE RACES of the STRAITS SETTLEMENTS and
MALAY STATES.*

By F. A. SWETTENHAM, Esq.

At a conference convened by the Anthropological Institute of Great Britain and Ireland to listen to a paper on the races of the Straits Settlements it might fairly be expected that you would hear some very learned and interesting details on a subject which has for years engaged the attention of scientific men. I beg to assure you at once that I am not a scientist. I shall not attempt to follow such writers as James Richardson Logan and Baron Miéluho-Maclay in a disquisition on the ethnology of the inhabitants of the Malay Peninsula.

My effort to interest you will be of the humblest and most commonplace description, and of necessity it will be brief.

Before I say anything about the races inhabiting the Straits Settlements I should like for one moment to detain you with a word about the country they inhabit.

The Straits Settlements consist of two islands, Penang and Singapore, and a strip of the mainland called Malacca lying between them. Singapore is about 1° 20' north of the equator, Malacca is 120 miles by sea north-west of Singapore, and Penang 260 miles further in the same direction. All three settlements are in the Straits of Malacca, and together they comprise, with a recently acquired strip of territory called the Dindings, an area of less than 1,500 square miles, containing a population of half a million inhabitants. The very interesting and instructive colonial statistics which are printed in the

Exhibition near that gigantic chart of the world, and under the clocks which show you that the Queen's flag really does wave over an empire where the sun never sets, disclose a fact so remarkable that I may be permitted to call your special attention to it in connection with the subject under consideration: it is this, that whereas the area of the Dominion of Canada is so enormous that it more than doubles that of the whole Indian Empire, the value of the trade of Canada is actually less than that of the Straits Settlements colony. The figures in the returns for 1884 were roughly, Canada, thirty-nine millions, the Straits Settlements, forty millions sterling. I mention that because it is certainly a curious fact but little known, and it adds an interest to the consideration of such a subject as the races inhabiting these settlements. I need hardly tell you that up to the year 1867 the Straits Settlements formed one of the Presidencies of India, a non-paying Presidency, that in that year they became a Crown colony and remain so. There are no duties, all the ports are free, and I believe the colony is financially the most prosperous of any of its class. At any rate it pays £50,000 a year for imperial troops, it contributed £100,000 towards military operations in its neighbourhood, and it has just spent £100,000 at the request of the Imperial Government in fortifications. It may therefore be concluded that those with whom lies the responsibility for the defence of the Empire regard Singapore as an important strategic post.

I trust you will not think that in mentioning these facts I am digressing from the subject, and I confess I should like, if time had permitted, to tell you more of a colony which must be of considerable importance to the British producer and consumer, though I doubt if its existence is much known outside the narrow circle of those whose interests have brought them in direct contact with the place.

I said that the population of the Straits Settlements colony was half a million, and I may add that thirty years ago the number of inhabitants was 248,000. The races were divided as follows at the last census in 1881:—

Malays	174,326
Chinese	174,327
Natives of India	41,106
Europeans	3,483

the balance being made up of representatives of between twenty and thirty different nationalities.

In regard to the division of races the interesting facts to be noted are that the Chinese, whilst by far the most important race, the most laborious, intelligent, wealthy, and the largest

contributors to the revenue, are also increasing in numbers by far the most rapidly, mainly owing to the enormous number of immigrants who year by year leave China to seek their fortunes in the Straits of Malacca. A fact of equal if not greater interest is that the Malays, while they appear to be dying out in those Malay states which are under a purely Malay government, are slowly but surely increasing their numbers under the British Government in the Straits Settlements colony, and this increase is a natural increase, and not one to be ascribed (except in a minor degree) to immigration.

The natives of India are increasing from the same cause as that which influences the Chinese, but to a lesser extent, because though they find in the Straits Settlements a prosperity which is very unusual in their own country, the Government of India has until quite recently placed all kinds of hindrances in the way of free emigration of natives of India from the Indian Peninsula to the Straits Settlements.

So far I have referred, as the notice of this conference bids me, to the races of the Straits Settlements, but I would ask you to let me include the races of the Malay Peninsula, for the chief interest to ethnologists is probably in the aborigines of the Peninsula, none of whom are found in the more civilised colony.

The Malay Peninsula covers an area of about 75,000 square miles, and contains about 670,000 inhabitants, *excluding* Chinese and other recent settlers. These people belong to three distinct stocks.

The Thai or Siamese	(about)	150,000
The Malay	(about)	500,000
And the Negrito or Aborigines	(about)	20,000

Under the protection of the British crown and the direction of the Governor of the Straits Settlements are three important Malay states, Perak, Selangor, and Sungei Ujong, all of which have contributed specimens of their products to this Exhibition, and the first mentioned has sent here and erected the Malay house which you may see in the garden. I do not propose to refer to the races of the unprotected states of the peninsula, and in those I have mentioned the Siamese element is so small that it may be dismissed from consideration.

The Malay and Negrito races are both of the highest interest from whatever point considered, but it is quite impossible, in the time at my disposal, to do more than refer to them in the briefest possible manner.

It is unlikely that the Malays can be really indigenous to the peninsula, and where they came from, whether Java, Sumatra,

or elsewhere in the archipelago, is a question which has never yet met with a satisfactory answer. The Malay tradition is that they had a supernatural origin, and that they crossed from Sumatra to the Malay Peninsula. The tradition concerning the swords in the Perak Regalia will give some idea of what amount of confidence can be placed in Malay history. Wherever they came from, the Malays spread themselves and their language over an enormous area, and Malay is now, and was 400 years ago, spoken throughout the Malay Archipelago from Sumatra to the Philippine Islands. There is a colony of Malays at the Cape of Good Hope and it is supposed that the Malay language can be traced in the dialect spoken by the savages of Formosa.

As regards the weapons, I will read to you what Raja Dris says of the sword with pearls in the handle; it is one of the most valued pieces in the Perak Regalia.

(The Perak Regalia were here exhibited and described.)

History of the Pérak Regalia.

By H.H. Rajah Dris, C.M.G.

Translated by F. A. Swettenham, Esq., H.M.'s. Resident at Selangor.

"THIS is the history given by men of olden time, regarding the Regalia of the Sultans of Pérak, the home of peace.

"There was a Raja named Raja Chulan who came out of the sea clad with splendour; he it was who originally sprang into being at the mountain called Sa'Guntang Mahâ Biru. Now when His Highness rose out of the sea he was wearing a crown studded with precious stones. Behind his ear he wore a seal called Lalinter (Lightening), with a handle of the wood called Gâmat and a sword called Chorek Sa'manjakinin. It was said by the men of old time that this sword was made by a king called Japhet, son of Noah, the Prophet of God, and it is a most deadly weapon. In the handle of the sword are the two priceless stones called 'Lok-Lok,' while at the end of the sheath there is a stone called 'Kachûbong.' This sword was brought by Raja Chulan from out of the ocean to become the Regalia of the country of Pérak. Secondly there is a writing called Chiri brought by Bahta out of the sea. It was Bahta who was vomited by the Cow at the mountain called Sa'Guntang, hence the class called 'Cow-vomit' now existing in Pérak. Thirdly there is a golden betel-nut box called 'Puan Nâgatâroh;' that betel box also came out of the sea. The sword called 'Sêda Mëlêkah,'

"and the sword called 'Pěbûjang' and a 'Kris alang' named " 'Pěstâka' are said to have come from Acheen; there is also a "pěti bėnian² and a golden mundam which were brought from "Johor by the late Sultan Tānah Abang.

"Moreover there is a Guliga found by a woman of Těmong "named Che Teh Pěrbu. She it was to whom the title of Toh, "Těmong was given and she presented the Guliga to H.H. the "late Sultan Tānah Abang when he was on the throne of "Pěrak. Finally many articles of the Regalia owe their origin "to the custom that prevailed whereby each Raja when on the "throne should add to the Regalia some fitting article of novel "description.

"That was called an instituted custom, that is to say a recent "custom."

The other daggers are specimens of the Malay kris, and though the owner likes to put his weapon in a pretty scabbard, it is not the golden sheath but the highly tempered blade he values. Those two krisses with curious handles in the shape of a Malay comedian's mask are modern weapons, but they are only made in the heart of the Malay Peninsula, at a particular spot, and they are most difficult to procure. It used to be the custom for Malay Rajas to sleep with their weapons on such a cushion as that, placed at the bed head, and this silver border is some 60 or 70 years old.

The earthenware water jar is of recent manufacture, and was made in the interior of Pahang, where I got it a year ago. The design is called the "pomegranate," and the clay being unglazed is porous, and the water in the vessel is thus kept fairly cool.

I would now ask you to look at the fabrics, which are fair specimens of Malay weaving. They are all but one of silk, woven in the roughest hand looms; but the designs are, I believe, peculiar to the Malays, and it is a pleasure to me to mention that the President of the Royal Academy, visiting the Exhibition in the earliest days of its existence, was specially struck with the artistic value of these Malay fabrics. The cotton painted cloth is what is called a "kain batek"; it is made in Java, and this class of "sarong," as the Malay national garment is called, is highly valued by the Malays. The colours are permanent, and the pattern is obtained by covering the cloth with a thin layer of wax, tracing the design for each colour separately, and then dipping the cloth in the dye. All the fabrics, whether silk, cloth of gold, or cotton, will wash without injury, but the prices of these stuffs are high.

¹ A "Kris Alang" is between the "Kris panjang" and the "Kris pandak" in size.

² A "pěti bėnian" is the Treasure box of a Regalia, a kind of ancient safe.

Malay women pride themselves on their skill in mat-making and needlework, and you will find here specimens of both. The mat and betel boxes are made from the bleached inner portion of the pandan leaf.

I should like for a moment to call your special attention to these specimens, as illustrating what I think is an unusual degree of artistic taste and creditable work when the implements at command are taken into consideration. The gold box belongs to the Pêrak Regalia, and is similar in shape to the silver box though of different design. Both are meant to contain the betel-chewing apparatus, and both are of a pattern no longer used. I believe they are at least 100 years old, and they were probably made by Sumatran workmen in the employ of the Sultan of Pêrak. The golden bowl, with a mixed gold and copper support, is to hold drinking water, whilst the double silver stand is for rosewater in which to wash the fingers before and after eating. These two vessels also belong to the Pêrak Regalia, and to judge from the appearance of the latter it must be of great age. I think it will be admitted that this silver rosewater dish, with its immense variety of design in the highly repoussé work on both body and stand, is an exceptionally beautiful vessel. The silver dish, betel boxes and scissors, and the water bowl with cover are also good specimens. They are about 40 or 50 years old and the work of Sumatran Malays. The small golden pomegranate is modern work, made in Trengganu. It is intended to hold attar of roses and to be tied to the corner of a pocket handkerchief.

Until about the year 1250 the Malays were pagans or followed some corrupted form of Hindu worship, and Sultan Mahmud Shah, who reigned over the Malacca dominions in the 13th century was the first Malay Prince converted by Arab missionaries to the Mohammedan faith. His reign was a long one and his power extensive, so that when the Portuguese arrived in the Straits of Malacca in 1511, they found the greater part of the Malays of the Peninsula professing the religion of Islam. It is a curious fact that up to the time of this conversion the Malay, of all the Sumatran languages, should have possessed no written character of its own, and those Arabs who spread the Mohammedan faith taught also the use of the Perso-Arabic character and introduced many Arabic words into the Malay language. Malay is essentially a dissyllabic language, but it contains a considerable number of Sanskrit words, supposed to have been introduced by the Hindus, who appear to have settled in Java and Sumatra in the 4th century. Relics of Hindu superstitions are still found amongst the Malays and Negritos of the Peninsula, and the customs even now observed, especially

in Pêrak, on certain occasions are especially interesting, utterly opposed as they are to Mohammedan teaching, and savouring strongly of devil-worship.

The Malay people were a very important power in the archipelago before their conversion to Islam, but I cannot tell you anything of the state of their then civilisation, for their so-called histories are not trustworthy, and I am not aware that any specimens of their manufactures in those days exist. I have brought here for you to see some gold and silver vessels of ancient origin—from 50 to 200 years old—some weapons of more recent date, a water jar, and a few fabrics used as wearing apparel. I doubt whether the influence of the Islam creed can be traced in these manufactures, but there is no question that it has proved most congenial to the Malay character; a character which cannot be described in a sentence, but the leading features are pride of race and birth, extraordinary observance of punctilio, and a bigoted adherence to ancient custom and tradition. I can only speak of what the Malay is now, and I am inclined to think that six centuries of the Mohammedan faith has moulded his character in respect of the features I have mentioned, while an enormous belief in the supernatural is possibly a relic of the præ-Islam state.

Finally, there are the Negrito tribes of the Malay Peninsula, in reference to whom Mr. Abraham Hale has written an interesting paper, which was read at a meeting of the Anthropological Institute early this year. M. De Morgan has also written recently on the same subject in the French publication "*L'Homme*," and the Russian traveller, Baron Miéluho-Maclay, has made these people his special study.

In the Straits Settlements Court of the Exhibition will be found the most complete collection of the clothing, weapons, and ornaments of these people ever yet brought together, and specimens of some of these are now before you.

The Negrito tribes are called by the Malays of different states by many different names, but perhaps the commonest is "*Orang Utan*," wild or jungle people. My own observation leads me to the conclusion that they are divided into two widely different sections, usually known as Sakai and Semang. The former, a people of moderate stature and large bones, rather fairer in complexion than Malays, with long unkempt, wavy hair, standing straight out from their heads. The latter, small and dark, with black frizzy hair, close to their heads like that of the negro races. Both classes are nomadic, live on roots and easily grown vegetables, fish, birds, and even snakes and lizards, while they avoid all strangers, whether Malays or Negritos of another tribe. Their clothing, when they wear any, consists for the women of

a bark cloth, tied round the waist and reaching to the knee (a specimen is before you), and for the men a similar cloth, passed round the waist and between the legs. For weapons they all use the blow-pipe with an arrow, the point of which is dipped in the heated juice of the ipoh or upas tree. In the use of this "sumpitan," they are very skilful, and can kill with it all kinds of birds and small animals. The Sakais use no other weapon but the Semangs have a very powerful bow and iron-barbed arrows, with which they can kill the largest game. For ornaments, the women wear round their necks and arms strings of brass rings, boars' or squirrel's teeth, beads or beetles' legs, and coins when they can get them. Sometimes also they paint their faces with red devices traced in the juice of the Bixa Orellana fruit, whilst both men and women wear, through the septum of the nose, a porcupine's quill, the bone of a fish, or a rolled piece of the leaf of the plantain tree. The more civilised Orang Ūtan live in wretched hovels built with jungle materials, while others sleep on the ground or in caves. Steel implements are highly prized by these tribes for they have neither the means nor the knowledge to make them themselves, but it is believed that comparatively recently some at least of them used implements of flint or slate.

None of the Negritos profess any religion or believe in any Supreme Being, but they are intensely superstitious, and imagine that the hills, the woods, and the rivers are filled with spirits, the majority of which are evil and must be propitiated. They call the sun a good spirit, and it is natural that they should have a high regard for it.

The rude art of the Negritos is confined to the ornamentation of their blow-pipes, arrow-sheaths, and hair combs, all of them made of bamboo, with primitive designs scratched by a hard point of wood or iron. The only fabric is the "kain trap," or bark cloth, you have seen; of pottery or metal work they have no knowledge, and it may be almost said that as far as manufactures go they want none and have none. Except in those cases where coming in contact with Malays they obtain the commonest knives and cooking vessels by a barter, which is always favourable to the more civilised race. Under these circumstances, it seems difficult to draw any close comparison between the Negritos without religion, arts or manufactures, and the Mohammedan Malays, who appear to be of a different type, and have some claims to rank amongst Eastern peoples as a race possessed of considerable artistic talent. Baron Maclay has, however, come to the conclusion, that in a comparison of language, a connecting link can be traced, not only between all the various tribes of Negritos, living quite cut off from each other,

but between them and the Malays, and he has expressed his opinion that the *Orang Utan* of the Malay Peninsula undoubtedly show traces of a Melanesian blood. This opinion appears to coincide with the result of Logan's researches so far at least as concerns a common *præ-Malayan* language.

DISCUSSION.

Mr. SWETTENHAM, referring to some remarks by Sir George Campbell, said that an interesting question had been raised, to which he could give a fairly satisfactory reply. The Chinese who came to the Straits Settlements as a rule brought neither wives nor families for the best of reasons, they had none and could support none. In nearly all cases the Chinese came originally as coolies, unable even to pay their own passage money from China. But after a few years' residence in the Straits they usually were in a position to return to China, marry, and again come to the Straits with a wife, or more commonly they married in the colony, sometimes Chinese, sometimes a woman of another nationality. The wealthier Chinese who had been one or more generations in the Straits, almost invariably married the daughters of Chinese in a similar position, and what was very curious was that these people, Straits-born Chinese, used the Malay language more often than Chinese. Indeed, all Chinese resident in the Straits found it more easy and more useful to acquire a slight knowledge of the Malay tongue than to attempt to carry on business with Chinese from another province in an unfamiliar dialect of their own language.

Mr. Swettenham said that this state of affairs prevailed specially in Malacca to which place the Chinese liked to retire in their old age: indeed, Malacca might be described as a popular Chinese cemetery, and it was more common, at least for Straits-born Chinese, to provide for their burial in Malacca than in China. It was certainly incorrect to suppose that a large number of the Chinese who immigrated to the Straits Settlements and the Malay States did not take up their permanent abode in those countries, whilst in many cases the height of their ambition was to become naturalized British subjects.

On the NATIVES of BRITISH NORTH BORNEO.

By W. B. PRYER, Esq., C.M.Z.S.

THE population of British North Borneo is very scanty, so much so that vast tracts on the east coast and in the interior are simply uninhabited forest. On the west coast the population in some districts is fairly large.

The want of people on the east coast is due to the ravages, in old days, of pirates by sea and head hunters by land.

Commencing on the seaboard of the east coast, the first people met with are the Bajaus or sea gypsies, on the littoral. The villages on the sea coast and at the rivers' mouths contain many Sooloos, Bugis, Illanuns, and others, but the first tribe of true Bornean aboriginals met with is the Booloodoopy, who have villages from Sugut and Paitan on the north, to Tabunac on the south. Largely mixed up with them are the Doompas on the north, and the Era-ans on the south. Inland from these people the whole bulk of the population is known as Dusuns or Sundyaks, divided up into many tribes and sections, including the Roongas, Kooroories, Umpoolooms, Saga Sagas, Tunbunwhas, Tingaras, Romanows, and many others, those of the far interior little better than roving savages, while nearer either coast, where they have rubbed against Mohammedan civilisation, they are much more cultivated, both in their dress and manners.

The Bajaus or sea gypsies are a curious wandering, irresponsible sort of race, rather low down in the scale of humanity, and live almost entirely in boats, in families. Though undoubtedly of Malay origin, they are much larger in stature, and stronger and darker than ordinary Malays. Not caring to store up property, and rarely troubling themselves as to where next week's meals are to come from, they pick up a precarious livelihood along the shore line, by catching fish, finding sea slugs and turtle eggs, spearing sharks, and so forth. As an illustration of their unthriftiness, I may mention that I have known one who brought a find of rather higher value than usual to market (a tortoiseshell, I think), and bartered it for rice, the only thing they care for, and then threw two or three bags of the rice overboard sooner than be at the bother of taking it about with him. They lead a wild, free, roving life in the open air, untroubled by any care or thought for the morrow.

I am myself regarded by them as a chief of the Sandakan division of Bajaus.

The weapons they use are the barong, spear, round shield, and tumbeloosow. Very few of them have guns. The tumbeloosow is a long light lance, made of bamboo with a sharp wooden spike at the end: this they can throw for two or three score yards, thus giving them a great advantage over any people not armed with any projectile.

The well-known Balignini were a subdivision of the great Bajau tribe: they used, as professional kidnappers, to harry the seas from Macassar, Batavia, and Singapore on the south to Manila on the north; they did not, as a rule, murder, without they thought there was occasion to do so. In Sandakan and other places there are many people now living who were kidnapped in very distant parts and brought up for sale in the old times.

The model of a pirate boat or depong, made by a Bajau chief, who, though not a pirate himself, has taken a prominent part in the rough time in which he lived, is shown in the British North Borneo Court, at the Colonial Exhibition.

The last pirate raid along our coast occurred in 1879, when the Balignini murdered or carried off sixty-five people, Bajaus mostly; as late as 1881, they conducted raids elsewhere, but all this sort of thing has now, it is hoped, been put a complete stop to from all the coast under our control. Many of those who used to be leading pirates have now quietly settled down to agricultural pursuits.

The Illanuns are a race who inhabit the south side of the island of Magindanao. Long ago their warfare against the Spaniards degenerated into general piracy. Their usual practice was not to take captives, but to murder all on board any boat they took. Those with us have all settled down to a more orderly way of life now, however. The Illanun kris is about two feet long, broad and double edged in the blade, and is held like a sword.

The Sooloos are a people inhabiting principally the island of Sugh in the Sooloo Archipelago; mostly lazy, independent, and turbulent, they are not regarded with great favour by everybody; but brave, restless, and fierce, they made the best and almost the only traders in face of the numerous dangers that beset both sea and land to within the last few years, and many of them are settled down in every village along our coast line. Their ancestry is very mixed, there being a large infusion of both Arab and Chinese blood in their veins. A good many of the Sooloos are not bad fellows in their way when you come to know them. Most of these Sooloos, Illanuns, Bugis, and other coast people, the Bajaus excepted, are well-behaved, courteous, and intelligent, and even companionable.

Leaving the coast and before reaching the true tribes of the interior, there are generally some villages inhabited by a mixture of races, descendants of people from the interior, and of Sooloos, Bajaus, Malays, and others. These people, in some places known as the Doompas, used to oppress the natives on the one hand, exacting tithes of their produce, forcing sales of goods upon them at exorbitant prices, &c., while on the other they used either to stop traders ascending the rivers altogether, or to extort heavy tolls from them for permission to pass. The establishment of a firm government in North Borneo put an end to most of these irregularities some time ago.

The first true tribe of the interior arrived at from the east coast is the Booloodoopy. The Booloodoopies are a somewhat singular people, many of them having strangely Caucasian

features, or at all events departing largely from the ordinary Mongolian type. Some of them have well raised bridges to their noses and very round eyes. These peculiarities have been enlarged upon by a French savant, Dr. Montano, who visited North Borneo in 1880. The Boolloodoopies are not very bold, and as the richest of the birds'-nest caves occur in their country, they have had to oppose cunning to the straightforward exactions made upon them from time to time by Sooloo and other rapacious adventurers. The Era-ans in Darvel Bay are closely connected with the Boolloodoopies and like them are large birds'-nest cave owners. At various times both these tribes have sought the society of Sooloo Datos, as a barrier against their fellow Datos, and a protection against the marauders who used to infest the country both by sea and land, and in many places there is a large infusion of Sooloo blood in consequence.

In Darvel Bay there are the remnants of a tribe which seems to have been much more plentiful in bygone days, the Sabahans. Most of them are so mixed with the Era-ans as to be almost indistinguishable. Some of them however, still have villages apart, remain heathens in their religion, and would practise their old customs, human sacrifice included, if allowed. In some of the birds'-nest caves mouldering coffins are to be seen, rudely carved with grotesque figures, said to have been deposited there in bygone days by the old Sabahans: many of them are on ledges of rock at considerable elevations.

Next above the Boolloodoopies are the Tunbunwhas, the first sub-division of the main tribe or people known as the Dusuns or Sundryaks, who constitute the chief portion of the population of British North Borneo. I have never yet seen a completely satisfactory account of the Dusuns, or of the true Dyaks either: the latter are spoken of as the aboriginals of Borneo, but even in them there seems to be a great similarity in many matters to Chinese, while the Dusuns would seem to be of nearly half Chinese ancestry. I do not incline so much to the idea that Chinese men and women came over in bodies and settled down in numbers at a time in North Borneo, as that, long ago, when a large trade was being done between Borneo and China, many Chinese traders, shopkeepers, sailors, and the like, married women of the country and settled down. This sort of thing is, in fact, going on even in this day, thus effecting a slow infiltration of Chinese blood; though not of Chinese speech or manners generally, though I believe that in one or two places on the west coast Chinese is spoken and written, and Chinese customs are practised. In many places the modes of agriculture adopted by the Dusuns are far superior to anything of the kind anywhere else in Borneo, and are supposed to

be due to Chinese influence. Ploughs, winnowing machines, and other appliances used by them are to be seen in the North Borneo Court, sent over by Mr. Dalrymple from the Putatan district on the west coast.

Difficult as it is to tell how far the Dusuns owe their ancestry to Chinese, it is still more so to say where the Dusun ends and the Dyak proper begins. Many of the Dusun men in the interior wear the chawat and the women brass waist-belts and gauntlets just the same as the Dyaks, while nearly all the Dusuns have the same fancy for old jars, and most of them a modification of the head-hunting customs of the true Dyaks. This veneration for old jars is obtained without doubt from the Chinese. Is this any indication that Dyak ancestry also is partly Chinese? The taste for brass ornaments is very similar, although in an exaggerated form, to that of the Foochow Chinese.

The sumpitan or blow-pipe is one of the principal weapons of the Dusuns: the darts are tipped with poison.

The coast people and Booloodoopies and most of the Tunbunwhas are Mohammedans, but the tribes more in the centre of the country are heathens, Kafirs as the Mohammedans call them; their belief is that after death they all have to ascend Kina Balu, which the good ones find little difficulty in accomplishing, and are from there ushered into heaven, while the wicked ones are left unsuccessfully trying to struggle and scramble up the rocky sides of the mountain.

The Tunbunwhas and other Dusun tribes are greatly guided in their movements and operations by omens and dreams, good birds and bad birds, and so forth; and have superstitions in connection with a good many things.

Though not such ardent head-hunters as the true Dyaks, still the Dusuns of the interior and west coast used to indulge a good deal in this practice. When first I went to Borneo many houses on the west coast were ornamented with heads hung up round them, and in the interior, blood feuds between villages frequently occasioned head-hunting raids from one to the other. The men that took heads generally had a tattoo mark for each one on the arm, and were looked upon as very brave, though, as a rule, the heads were obtained in the most cowardly way possible, a woman's or child's being just as good as a man's. The true head-hunters were most formidable neighbours; there are none in our territory as they all reside to the southwards. The possession of a head appears to be a certain method of ingratiating oneself with the fair sex. During the famine in Sooloo in 1879, a great many slaves and captives were taken over to Booloongan and there sold, and in most cases the purchasers cut off their heads for that

reason. The number of slaves and kidnapped people so taken over was estimated at 4,000.

Dancing is too universal a custom of the Dusuns and Sundryaks not to be mentioned, they will always on the slightest inducement get up a "main booloogsi" as it is called, while in times of abundant harvests dancing is going on all night long, night after night, in every village or cluster of houses. The dance is a very primitive one; a large ring is formed of men and women holding each others' hands, the men together and the women together, and they circle round and round with a sort of slow sliding step, singing or chanting in a somewhat weird monotonous way as they do so. The Bajaus have the "main booloogsi" also, in their case the women form an inner ring, and the men an outer one, round a pole, and circle round it in opposite directions; and whereas the Dusun dance goes on slowly all night long till daybreak, the Bajaus get excited and sing and dance faster and faster, bounding round the pole, till at last they are all exhausted.

The most objectionable custom practised by the Dusuns was that of human sacrifice or "surmungup" as they called it; the ostensible reason seems to have been to send messages to dead relatives, and to this end they used to get a slave, usually one bought for the purpose, tie him up and bind him round with cloths, and then after some preliminary dancing and singing, one after another they would stick a spear a little way—an inch or so—into his body, each one sending a message to his deceased friend as he did so. There was even more difficulty in getting them to abandon this custom than there was to leave off head-hunting. Down in the south-east the way of managing "surmungups" is for a lot of them to subscribe till the price of a slave is raised, he is then bought, tied up, and all the subscribers grasping simultaneously a long spear, it is thrust through him at once. This custom still exists in Tidong and the neighbourhood.

The tribes near the coast usually live in separate houses, two or three families in each house, though even amongst them six or eight families will sometimes be together; but in the interior, twenty or more families will live together under one roof in what is known as a "benatong" or long house, each family having its separate apartments, the doors opening on to a sort of covered corridor. All these houses are well raised off the ground on poles, in the Malay fashion. In the interior, amongst the heathens, the space underneath the house is frequently utilized as pig-styes.

Over the greater part of North Borneo, the people may be described as more or less lazy; the forest and the sea so abound in natural wealth that very little exertion is needed to collect a

sufficiency of it to barter for anything they want. The ground is so fertile that the slightest attention given to it is repaid by an abundant return, they frequently have two crops coming up on the same ground simultaneously; the men do the harder work, felling the trees, &c., by fits and starts, leaving most of the purely agricultural labour to the women, who do not, however, overmuch fatigue themselves with it, as, as I have already mentioned, almost all their nights are given up in good seasons to dancing while the crops are ripening outside. Their wants are of course but few, their houses are soon made of materials found in the adjacent forest, wood for fuel is only too abundant, clothes are scarcely needed, their fields and gardens yield a constant supply of sweet potatoes, tapioca, bananas, &c., after the first crops of paddy and maize have been cleared off, and if anything more is needed, produce-collecting parties of the men are made up, who get beeswax, camphor, rattans, &c., in the forest. Some of the things they buy are most expensive, sixty and seventy dollars is frequently given for a single sarong. Men of industrious habits can easily be overburdened with the quantity of goods they can acquire. Up the Labuk, where large earthenware jars are what the people most covet, I have seen some of the family residences crammed full, top and bottom, and hung up, to the roof with these rather cumbersome evidences of wealth. It may be said generally that whatever they want they buy, from a bundle of tobacco to a gold hilted creese.

Amongst most of the tribes, brassware of various kinds used to be much valued, a great deal on account of the facility with which it could be hidden in the forest, or even in mud at the bottom of rivers. In the old days keeping any visible wealth was a sort of challenge, and consequently people as they bought things used to hide them away. The whereabouts of many of these deposits has been lost, and it not unfrequently happens that produce-collecting parties in the forest stumble across a lot of brass cannon, old gongs, &c.

One of the customs of the Tunbunwhas worth mentioning is that of embalming the dead: this is done with the valuable Borneo camphor, abundant in the woods in their neighbourhood, more particularly on the Kina Batungan, it is worth some 60s. or 80s. a pound; the coffins are hewn out of a solid piece of billeau (ironwood), and are of considerable value.

On the west coast the population is thicker, the produce has been mostly cleared off, and the people have to give a much more steady attention to agriculture, and undertake various manufactures themselves.

As we come over to the east coast the people are lazier, undertake little agriculture and less manufacture. On the coast line, however, the Bajaus and Sooloos make a few things.

There is a curious resemblance between the sarong and the Scotch kilt: in the manner they are worn, and an even closer one in their designs: the plaid of some of the commoner sarongs is said to be the Bruce tartan, while many others, I am told, are of the Stuart pattern.

Mention is made by Mr. Dalrymple of a tribe distinct from the Dusuns, known as the Tagaas, who inhabit some of the mountains of the west coast and who he seems to think are the descendants of some old and distinct race.

From the above remarks it will be gathered that the main race inhabiting British North Borneo, the Dusuns, are in all probability descendants of a mixed aboriginal and Chinese ancestry, and that as we come nearer to the coasts the sub-tribes mix and blend with each other, and with aliens, till, on the east coast there is very little of the native type left at all, a race rapidly springing up there of very cosmopolitan origin. On the west coast there are more natives and fewer aliens, but much the same thing is occurring there on a smaller scale. The Dusuns in character are quiet and orderly and not particularly brave, but no doubt would be industrious if occasion arose; a very good rural population, with somewhat yokelish notions. Any slight bloodthirsty tendencies that circumstances and the want of proper restraint have driven them to, are gladly abandoned wherever our influence has spread. They show every symptom of thriving and increasing, under a proper firm government, and there is no fear of their melting away and disappearing like so many races have done, when brought into contact with the white man. Much the same thing may be said of the sea coast races, who also possess many good work-a-day knockabout qualities, but not to the same extent as the Dusuns. Of them, the Bajaus are probably doing the best in some districts, Sandakan particularly, as they bring their great strength to bear on fairly rough work, are increasing and multiplying rapidly, and are even beginning to build houses. The Sooloos are the principal fishermen, and take not a small share of the trade amongst the islands; while all are glad to seize the opportunity of living quieter and more secure, if less adventurous, lives than they used to do in the old days. At first there was some slight difficulty in persuading some of them to settle down to a more orderly state of things, but for four or five years past matters have been going on smoothly and quietly, except in some of the quite outlying districts; while it is not an uncommon thing to see large bodies of people, men, women, and children from other parts, generally under some grave and peace-loving chief, come sailing into our waters to settle under our flag.

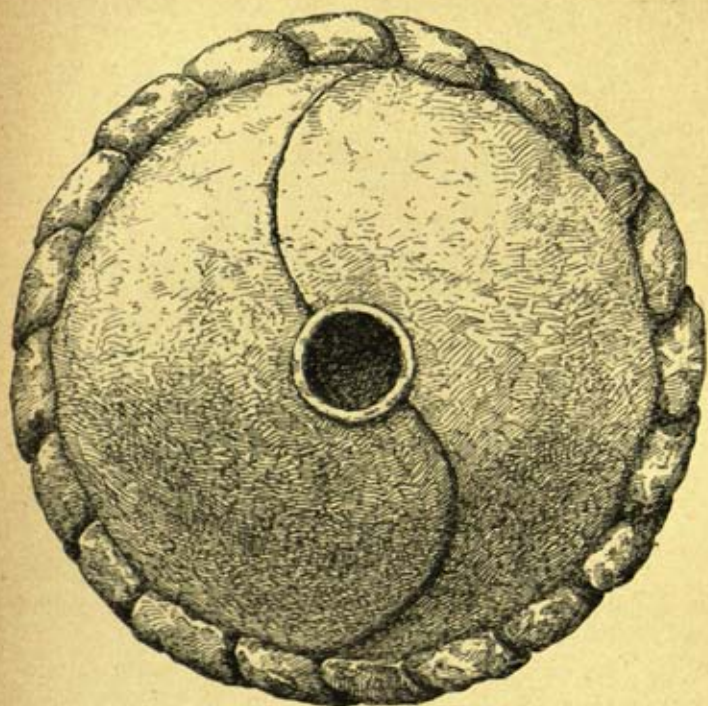


FIG. 1.

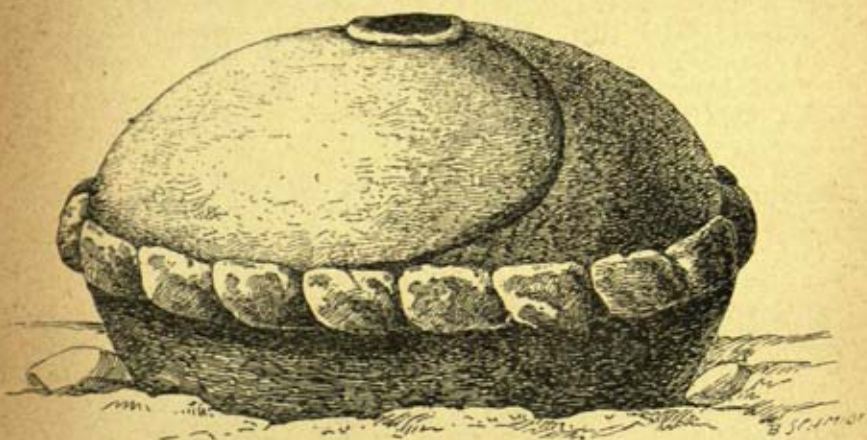


FIG. 2.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

NOVEMBER 9TH, 1886.

FRANCIS GALTON, Esq., M.A., F.R.S., *President, in the Chair.*

The Minutes of the last ordinary meeting were read and signed.

The election of the following gentlemen as members of the Institute was announced:—

G. W. HAMBLETON, Esq., of the National Conservative Club; D. F. A. HERVEY, Esq. (of Malacca), 36, Duke Street, St. James's; W. R. REID, Esq., M.D., Lecturer on Anatomy at St. Thomas's Hospital; R. J. RYLE, Esq., M.A., M.B. Oxon., of 14, Doughty Street, Mecklenburgh Square; and W. F. STANLEY, Esq., F.G.S., of Cumberlow, South Norwood.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the UNDER-SECRETARY OF STATE FOR INDIA.—History of the Relations of the Government with the Hill Tribes of the north-east frontier of Bengal. By Alexander Mackenzie.

From the ROYAL COMMISSION FOR VICTORIA, COLONIAL AND INDIAN EXHIBITION, 1886. — Illustrated Handbook of Victoria, Australia.

From the ROYAL COLONIAL INSTITUTE.—Catalogue of the Library.

From the ARCHÆOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—The Archæological Journal. Nos. 170, 171.

- From the SOCIETY OF ANTIQUARIES. *Archæologia*. Vol. xlix, Part 2.
- From the MONTREAL COMMITTEE OF THE BRITISH ASSOCIATION.
—Canadian Economics.
- From the PEABODY ACADEMY OF SCIENCE.—*Memoirs*. Vol. II.
- From the TRUSTEES OF THE PEABODY MUSEUM.—Eighteenth and Nineteenth Annual Reports.
- From the SMITHSONIAN INSTITUTION.—Report. 1884.
- From the UNITED STATES GEOLOGICAL SURVEY.—*Bulletin*. Nos. 24, 25, 26.
- Report, 1883-84.
- Monographs. Vol. IX.
- From the STATE BOARD OF HEALTH, MASSACHUSETTS.—Seventh Annual Report. Supplement.
- From the SECRETARY OF THE COMMONWEALTH, MASSACHUSETTS.—Registration Report, 1885.
- From the ACADEMY.—*Bulletin of the California Academy of Sciences*. No. 4.
- Atti della Reale Accademia dei Lincei*. 1885-86. 1st Sem. Fas. 12-14; 2nd Semestre. Fas. 1-7.
- Nova Acta Academiæ Cæsariæ Leopoldino-Carolinæ Germanicæ Naturæ Curiosorum*. Tom. xlvii, xlviii.
- Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg*. Tom. xxx. No. 4.
- From the ASSOCIATION.—Report of the fifty-fifth Meeting of the British Association for the Advancement of Science; held at Aberdeen in September, 1885.
- Proceedings of the Geologists' Association. Vol. IX. No. 5.
- Journal of the East India Association. Vol. xviii. Nos. 5, 6.
- Report and Transactions of the Devonshire Association for the Advancement of Science, Literature, and Art.—Vol. xviii and Extra Volume—The Devonshire Domesday. Part iii.
- Journal of the Royal Historical and Archæological Association of Ireland. No. 64.
- Proceedings of the American Association for the Advancement of Science; Thirty-third Meeting, held at Philadelphia, Penn., September, 1884. Parts I, II.
- Journal and Proceedings of the Hamilton Association. 1884-1885.
- From the INSTITUTE.—Proceedings of the Royal Colonial Institute. Vol. xvi.
- Transactions and Proceedings of the New Zealand Institute. Vol. xviii.
- Proceedings of the Canadian Institute. No. 145.
- From the INSTITUTION.—Journal of the Royal United Service Institution. Nos. cxxxiv, cxxxv.
- Journal of the Royal Institution of Cornwall. Vol. ix. Part 1.
- From the SOCIETY.—Proceedings of the Royal Society. Nos. 243-246.

- From the SOCIETY.—Proceedings of the Royal Geographical Society. 1886, July–November.
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EXHIBITION of ETHNOLOGICAL CASTS.

By Professor W. H. FLOWER, LL.D., F.R.S.

Professor FLOWER exhibited some specimens from the remarkable collection of casts of faces of natives of islands of the Pacific Ocean, which has been lately made by Dr. Otto Finsch, of Bremen, and spoke of their great value as permanent material for anthropological study, which will endure after the people themselves, and even the races to which they belonged, have passed away.

The face presents the most important characters by which races, as well as individuals, are distinguished, and these casts appear to be so carefully executed as to give with great exactness the form of the nose, forehead, mouth, &c., even so as to allow of accurate measurements being taken from them. They are, moreover, coloured from nature. The operation of making so large a series of casts (164 different individuals) was, as might be supposed, owing to the reluctance of many of the subjects to submit to the necessary operations, a work of great labour and cost, requiring much time, tact, and perseverance on the part of Dr. Finsch. The collection includes 46 Micronesians from 19 different localities, 12

Polynesians from 8 localities, 14 Malays from 12 localities, 80 Melanesians from 20 localities, 1 Negro, and 2 Australians.

Professor FLOWER, in presenting in the name of the author a separate copy of a paper on "Les caractères Simiens de la Machoire de la Naulette," from the *Revue d'Anthropologie* for July, 1886, by M. Paul Topinard, stated that the interest of the jaw, arising from the circumstances under which it was found denoting great antiquity, fully justified the exhaustive treatment which M. Topinard had accorded to it in this memoir. Many misstatements regarding it, arising from imperfect or erroneous descriptions of previous authors were now corrected, and a full and complete examination of all its characters, compared with other human and simian jaws given.

The author concludes that although by no means so low a type as has been supposed (for example, the genial tubercles, on the absence of which much stress has been laid, are really present), and although none of the simian characters which have been pointed out are of absolute value, yet there is a greater combination of small characters all pointing in the same direction, than in any other known jaw.

The following paper was read by the Assistant Secretary :—

An INTERPRETATION of one of the COPAN MONUMENTS
(Honduras.)

By Dr. E. T. HAMY, of Paris, Corr. Memb. Anth. Inst.

[WITH PLATE III.]

THE ruins of Copan are, as is well known, situated in Honduras, a few miles from the north-western frontier of this little state. They were discovered in 1576 by Diego Garcia de Palacio, Licentiate and Auditor of the Royal Audience of Guatemala, but no systematic examination of them was made until April, 1834, when their investigation was undertaken by Colonel D. Juan Galindo.¹

The memoir which he wrote on the antiquities of Copan was but very incompletely published, and his drawings are only known through a few lithographs; of these, however, only a very small number of proofs "before letters" are in existence.²

¹ D. J. Galindo, "The Ruins of Copan in Central America." (*Archæologia Americana.*) Transactions and Collections of the American Antiquarian Society, Vol. ii, pp. 545-550, 1836.)

² These lithographs, five in number, were drawn at Bineteau's, about the year 1836. The drawings were effaced from the stones before any title had been engraved, and it is only by comparing the proofs to Galindo's original sketches, which are lodged in the archives of the "Société de Géographie," that I was able to identify these figures.

One of these lithographs represents, among other antiquities at Copan, a large and regular convex stone, the centre of which is hollowed out in the shape of a small basin. It is surrounded by a sort of tress, of which twelve plaits can be seen in the drawing.

In the unpublished note, dated 19th June, 1834, which Galindo sent to the "*Société de Géographie*," he described this monument as being nearly spherical, with a belt around it; and added "the horizontal diameter is 1.568 m.; the perpendicular diameter is smaller and 1 m. only. There exists a small cavity at the top, and a sinuous line winds round it."¹

"What is the meaning of this freak of art?" finally exclaims the American antiquary; and I myself, while examining Bineteau's lithograph, and comparing it with the wood engraving published a few years later, in Stephens' great work,² repeated, "What can this symbol be?"

At that time I was engaged in the study of certain curved lines, of a very special character, which were engraved or painted on various ancient pieces lately discovered in America. I could not help regretting that the design traced on the surface of the Copan stone should be so indistinct in the profile views given by Galindo and Catherwood. For a more thorough investigation, I required to have a top view of the strange monument which excited my curiosity.

A young and intelligent traveller, M. Louis Adam, recently returned from Central America, furnished me a few days ago—unknowingly, however—with the very document I was in need of, and thus gave me the solution I was endeavouring to obtain.

M. Louis Adam had come to ask me to visit a curious collection of antiquities gathered by him in Salvador, and had brought, for my inspection, some albums of sketches drawn, in January, 1884, from the Quiriza and Copan ruins, by a retired French Officer, Captain Toufflet, who has since died in Guatemala. One of the first drawings that attracted my attention was the round stone of Galindo and Catherwood, with a side and top view of the monument (Plate III). The latter sketch of our compatriot (Fig. 1) showed, on the convex surface of the stone, the very curve I had suspected while studying the incomplete documents that were in my hands.

The importance attached to this discovery will easily be understood when I add that the design engraved on the religious

¹ This latter detail, which is very conspicuous in the original sketch, was omitted in the lithograph. We shall see further on the great importance of this "sinuous line," which was first discovered by Galindo.

² J. L. Stephens, "*Incidents of Travel in Central America, Chiapas and Yucatan*," New York, 1867, Vol. i., p. 157.

monument of Copan, is no other than the *Tai-Ki*, *Taai-Kiik*, *Tae-Keih*, *Tae-hei*,¹ one of the most venerated symbols of the Chinese.

According to the Tchou-hi or Tchou-Fou-Tseu school, the *Tai-Ki* is the *Great Extreme*, the *Great Absolute*, the *pinnacle*, the *pole* of the world; it is a most perfect principle; it has neither end nor beginning; it is the idea, the model and source of all things, the essence of all beings.²

The *Tai-Ki* is represented in the following manner: On the semi-diameter of a circle, says Davis,³ a semi-circle is traced, while another semi-circle is also described, but in a contrary direction, on the remaining half-diameter.

The two figures thus obtained and combining with each other form what the Chinese call the *Yang* and the *Yin*, that is to say, Force and Matter, the active and passive spirits, the positive and negative essence, light and darkness, the rational soul and the physical soul—one is painted in a dark colour, the other is represented in a light tint; and in order to symbolize more completely the penetration and alliance of the two principles, a small light circle is added in the middle of the dark figure, while a dark disc is drawn on the light figure. These small circles, which were added subsequently to the invention of the *Tai-Ki* proper, are, however, not represented on the Copan monument, which gives thus an accurate idea of the ancient Chinese design of the Tchou-hi school.⁴ One may compare, for

¹ These are various forms of the same word, such as Du Halde and the old Jesuits, Davis, Edkins, von Faber, Jones, etc., have transcribed it in their works.

² J. B. du Halde, "Description Géographique, Historique, Chronologique, Politique et Physique de l'Empire de la Chine, La Haye, 1736, Vol. iii, pp. 36, 37. Cf. E. T. Éitel, "Fong-Shouï, ou Principes de Science Naturelle en Chine (Ann. du Musée Guimet, Vol. i, pass.) J. Edkins, "La Religion en Chine" (*Ibid.*, Vol. iv, p. 132.)

³ J. F. Davis. "China; or, General Description of Ways and Customs, Government, Laws, Religions, Sciences, Literature, Natural Productions, etc., of the Chinese Empire."

⁴ According to Chinese cosmogony, says Max von Faber, the universe was formerly a vesicle or cell in which was confined a gaseous chaos called *guoan-ki*. This fundamental cell is the *t'ai-kiik*, i.e., the commencement. The *guoan-ki* was an intimate mixture of two kinds of gas, one kind being the *iang*, i.e., the vivifying, the living, acting with knowledge, the active power, the masculine, the light, the other kind being the *im*, or the living, deprived of sentiment, the passive element, the feminine, the darkness. The *Tai-Ki*, or commencement, was thus represented: the red part corresponds to the *iang* element, and the black part to the *im* element. The large red section is called *t'ai-iang*, and the black section *t'ai-im*. The red disk in the black part is the *sio-iang* and shows the actual presence of the *iang* in the *im*—the black disk in the red section is the *sio-im*, and denotes the present existence of the *im* in the *iang*, it is a sort of ubiquity of the *iang* in the *im*, and of the *im* in the *iang*. (Max von Faber, "Transcendentale Voorstellingen der Chineezen. De Indische Gids. Staat-er-Letter Kundig Maardschift," Amsterdam, April, 1884, pp. 703, 704.)

instance, the top part of the Copan stone with the decorations figured on the vase given in Jacquemart's work, "*La Céramique*."

This ornament, the centre of which is occupied by a *Tai-Ki*, represents that symbol under various aspects, and surrounded by four *Kouas*, *Touy* and *Kien* on the one side, and *Kouen* and *Kien* on the other.¹

A picture, which I recently received from Tonkin, shows a *Tai-Ki*, painted green and red, in the middle of a *Sien-Tien*. The latter is composed of the same *Kouas* as the one published by M. Dumoutier in the "*Revue d'Ethnographie*" of 1885, but otherwise disposed. It is surrounded by twenty-eight circular medallions, diversely coloured, and containing, each of them, a Chinese character. Four other larger signs are printed in the corners. The top of the plate is occupied by cartouches bearing the symbols of *scarcity*, *long-life*, and *wealth*; the lower part of the picture shows the signs corresponding to the notion of *gain* and *happiness*.

This print, in which the symbol found at Copan, is thus honoured as the centre of all good, as the axis on which every prosperity revolves, forms part of a series of popular pictures printed in China; and thence they have spread all over the countries situated south of the Chinese provinces.²

The *Tai-Ki* is again to be found on certain magical tablets used in propitiatory sacrifices to obtain rain; it is engraved on armchairs, on tables, and on the wooden seats manufactured at Canton; it is painted on the banners of temples, and on the red paper stripes which are usually hung about doors at the New Year;³ they are again to be seen on household implements, on pipes, etc.⁴ It is therefore a well-known symbol, and is not only popular in China, but also in all countries that have been more or less influenced by Chinese civilization.

The presence of such a symbol in the ruins of Copan, where there exists so many manifestations of a strange and curious art so closely allied to the eastern arts of the old world, furnishes a fresh proof in support of the theory of an Asiatic influence over American civilization.

In fact, if it be correct that Confucius has mentioned the

¹ "*Revue d'Ethnographie*," Vol. iv, pp. 19 and 324. 1885.

² Lieutenant Gouin, French resident at Nam-Dink, bought that picture at the time of the *Tat* feast, and ascertained that it had been printed at Tay-hô, near Hanoi ("*Comptes rendus de la Société de Géographie*," 1885, No. 14, p. 418).

³ It acts as a counterpart to the sign "fire," which has, as is known, the power to protect houses from fire.

⁴ The "*Musée d'Ethnographie*" possesses an amulet hung on a pipe brought from Tonkin, and bearing a *Tai-Ki*, which, however, differs from the above symbol by a double inflexion of the lower curve.

Tai-Ki in an appendix of his commentary on the *Yi-King*,¹ it could only have been during the Song dynasty (1126–1278 A.D.) that the doctrine which considers this symbol as the principle of all things, began to spread widely over China. The 13th century is therefore the earliest date that can be set down to the erection of the Copan monument.

The famous symbol decorates the upper part of an altar² in the sacred precinct of the old religious city, and this altar, like all those discovered in these marvellous ruins, was placed in front of a statue.

It would be particularly interesting to know all the details of the statue to which was appropriated a stone of so peculiar a character. Unfortunately the idol, marked M on Stephens' and Catherwood's plan, was broken long ago; there only remains the pedestal, on which the two feet, bearing rich and beautifully carved sandals, are still to be seen; the rest of the statue lies on its back and is completely covered over by a large tree which fell upon it.³

Let us hope that Mr. Maudsley, whose presence in the Copan ruins has lately been reported, will give a new proof of his enlightened zeal for American archaeology by having this idol cleared, and a mould taken from it.

A careful examination of the statue might hasten the solution of the important problems which has sprung up as to the similarity, once more confirmed, between the old monuments of the Copan priests and those of the disciples of Tehou-hi.⁴

Explanation of Plate III.

Fig. 1. Top view of the stone of Copan, in Honduras, showing the sinuous line resembling the Chinese *Tai-Ki*.

„ 2. Side view of the same stone.

¹ P. J. B. du Halde, *op. cit.*, p. 36.

² This is what Stephens says about it in his "Incidents of Travel": "Opposite is a circular altar with two grooves on the top, three feet high, and five feet six inches in diameter, an engraving of which is here given" (Vol. I, p. 157.)

³ Stephens, *loc. cit.*, Plate.

⁴ This is the first time that the *Tai-Ki* has been so clearly pointed out on a religious monument of ancient America. This strange fact may be compared with other evidence which I have already published in the "Revue d'Ethnographie" (Vol. iv, pp. 20–21, 1885). I showed there that a nearly similar sign was sometimes used by the Chimus and the Yuncas, and I also recalled the fact that the mound-builders possessed and venerated a symbol of the same order, in which, however, the circle was divided into three zones instead of two.

DISCUSSION.

Mr. G. BERTIN said that he was sorry not to be able to agree with Dr. Hamy, but he considered that the monument was not intended to be viewed from the top, but from the sides; and it seemed rather to represent an artificial mound, with two semi-circular roads leading to the summit where stood the temple. If viewed from the top the design might be compared as well with the Egyptian urceus or the Indian pramantha as with the Chinese symbol.

Miss A. W. BUCKLAND remarked that although the sculptures on the Copan stone bear a strong resemblance to the curious engraved shells from American mounds, which she brought to the notice of the Institute last session, and which she believed to be traceable to Japan through the islands of the Pacific,—the resemblance consisting in the central disk, the waved lines proceeding from it, and the outer bosses; yet the division into two parts, instead of three, as in the shells and the Japanese drum, would seem to denote a different symbolism, and she failed to see in them the strong resemblance to the Chinese figure noticed by Dr. Hamy.

The following paper was then read by the Secretary :

The ABORIGINES of HISPANIOLA.

By HY. LING ROTH.

Introduction.

THE number of works from which to draw the materials of an account of the Aborigines of Hayti may almost be counted on one's finger ends. We have first of all Christopher Columbus's account of his Discovery of the West Indies, published under the title of "Select Letters of C. Columbus," by Mr. Major, 2nd ed., Hakluyt Society, 1870. In this edition is published Dr. Chanca's description of the events which occurred on the Second Voyage of Columbus. This account is supplemented by Ferd. Columbus's history, in Churchill's "Collection of Voyages" (Vol. II, 1704, pp. 557, &c., fol.) This includes (pp. 622-623) an interesting, if mixed, account of the superstitions, medicine men, and mythology of the aborigines by Ramon Pane, a Franciscan monk, who was engaged endeavouring to convert the Indians, and who was afterwards asked to describe their customs. All these men are of course, to be accepted as unanswerable authorities. One of the earliest published accounts of Columbus's Second Voyage was written by Nicolo Scillacio, and appeared in 1494 or 1495. This narrative is almost wholly derived from the letters of Guillermo Coma, and may be accepted as of historical value. In this paper has been used the Rev. John Mulligan's transla-

tion, which was brought out in New York in 1859. We then come to Angleria, more commonly known as Peter Martyr, a great collector of facts, and one who, from his position as a member of the Tribunal of the Indies, had every means of receiving the most authentic information. Indeed, he informs us that every one who returned from the "Ocean" came to him; it was chiefly due to this fact that he was so able to record the descriptions and histories he has handed down to us. Muñoz criticizes him somewhat severely; but in so far as we are able to judge, the restrictions refer more especially to portions of the Decades which do not concern us in our present inquiry. Angleria published his first Decade in 1511, and we have drawn our notes from "Hakluyt's Collection, &c.," Vol. V, 1812, pp. 168, 177, &c., &c., and also pp. 289–303. This latter portion¹ forms, as Angleria mentions, the sum total of the accounts he received from Andreas Moralis and others. Moralis was apparently a very trustworthy man, who was sent by the Governor Ovando to explore the interior of the island shortly after its discovery. He appears also to have been a very shrewd observer. The next author is Oviedo, or more properly, Fernandez de Oviedo y Valdez. He published his "Natural History of the Indies" in 1526 (Toledo, fol.), and a second edition in 1535 (Seville, fol.). We have made use of the French edition published at Paris in 1556. Oviedo's work forms the basis of nearly all the historians who followed him, and Thomas Jefferys, the geographer, in his "Natural and Civil History, &c." London, 1760, Part II, pp. 7–17, gives a very fair account of the natives of Hispaniola, taken almost wholly from Oviedo. Although Oviedo did not write till 1525, yet from a statement he makes (French ed., fol. 70) he must have been at St. Domingo probably soon after 1505, or after Moralis explored it. Girolamo Benzoni, with whom we have next to deal, did not visit the New World until about 1541, he spent fourteen years there, and published his book in 1565; we have drawn from the translation by Rear-Admiral W. H. Smyth, published in 1857 by the Hakluyt Society. At the time of Benzoni's visit the native Haytians were reduced to under 4,000, if we may credit Jefferys (Part II, p. 17). This would detract from the value of Benzoni's statements were it not for the fact that on account of his poverty he was obliged to mix with the Indians almost on terms of equality—he was so destitute that he had to make his own cassava bread—and that he traversed some of the most unknown parts of the island; being also an illiterate man, we judge, as well by internal and other evidence, that the informa-

¹ Third Decade, 7th to 9th chaps. inclusive.

tion he gathered was practically obtained. Very different, however, is the case with Le Pers. Charlevoix, who published Le Pers' account under the title of "*Hist. de l'Isle Espagnole*," 2 vols., 4to, Paris, 1730, says he obtained the MS., as well as permission to publish it, from the author; but M. Margry says that Le Pers repudiated Charlevoix's publication. However this may be, Le Pers, according to a statement in the preface, appears not to have gone to Hispaniola until about or after 1700. According to Jefferys there were at that date only 100 aborigines living, and according to the same preface Le Pers was chiefly if not wholly employed in converting the African slaves. A comparison of his account of the Indians with that given by Oviedo tends to the conclusion that he abstracted all he knew on the subject from that historian. Finally we have those princes among historians, Herrera-Tordesillas and J. B. Muñoz, who both had access to numerous documents not to be met with out of Spain. We have made use of the English editions of these works: Herrera's in 5 vols., 8vo., 1725-6, and Muñoz's, 1 vol., 8vo, 1797, both published in London.

There are other works to the contents of which we have not been able to gain access.¹

Constitution.

With regard to the appearance of the natives of this island, the authorities differ rather more than was to have been expected of eye-witnesses.

Hair.—The hair was flowing (Major, p. 13). Scillacio says their hair is black, soft, and hangs straight down (*op. cit.*, p. 87), and Oviedo (fol. 39) that the women had beautiful hair, soft and very black. The men were beardless (Chanca, p. 37, Herr., I, 62, Oviedo, fol. 39), save a few straggling hairs (Scill., p. 87). Their nostrils were very wide (Oviedo, fol. 39, Herr., I, 62). "Their foreheads, smooth and high, disagreeable, and they made them so at their birth, reckoning it graceful; for which reason, and because they always went bareheaded, their skulls were so hard that sometimes a Spanish sword would break upon their heads" (Herr., I, 62, also Oviedo, fol. 39). Scillacio (p. 87) says their heads are depressed, their foreheads high; and Ferdinand Columbus (Church., II, 586) speaks of the extraordinary high foreheads of the Watling Islanders.

While Oviedo (fol. 39) says their eyes were bloodshot (troubled), Scillacio, who speaks at second hand, describes them as grey with spots of various colours round them. So with

¹ The Royal Geographical Society has in the press a Bibliography and Cartography of Hispaniola by the present writer.

regard to their teeth, Oviedo (fol. 39) says they were very bad, and Scillacio (p. 87) says they were as white as ivory.

Their bodies were well made and proportioned (Major, pp. 6 and 13, Oviedo, fol. 39, Angl., p. 170), strong-boned and gross (Herr., I, 62). They had elegant well-polished nails (Scill., p. 87.)

As to colour, Columbus states they were not black as in Guinea (Major, p. 13), while Angleria (*op. cit.*, p. 190), says the women were of a lovely brown. They were whiter, of better countenance, and better shaped than the natives of the other islands (Herr., I, 62 and 67).

Character.

These people were very different on the north-west coast to what they were in other parts of the island. Columbus first landed on the north-west coast, and on his approach the natives fled, as they were timid to a surprising degree (Major, p. 6), but being called to by the Watling Islanders that the Spaniards were friends, and come from heaven (Major, p. 9), the natives flocked around to trade quickly enough. In the centre of the island, at Cibao, the natives likewise fled on the arrival of the whites (Church., II, 612). Columbus says of them here (*ibid.*, p. 7) that they were guileless, liberal, and exhibited much loving-kindness. Apparently, on all other parts where the Spaniards landed or attempted to land, while the natives appear to have been ever ready to trade, they first of all resented the approach of the Christians. Thus on the north-east coast at Ciguayos the natives showed fight (Church., II, 526), and at the south-east corner, probably Cuayacoa, they likewise were prepared for war (*ibid.*, II, 618). It would seem indeed that the whole territory of Ciguayos was devastated before the people were conquered (Angl., pp. 200-202). When the natives found they could not withstand the Spaniards in the open they continued to attack them when off their guard (Herr., I, 182), and during the revolt at Higüey the Indians, after repeated defeats rallied at every town (Herr., I, 297-301). The last cacique, "Harry," was never subdued, and the Spaniards were ultimately obliged to come to terms with him (Herr., IV, 223). The natives of Porto Rico, who suffered much from the raids of the Caribs, were also brave people (Herr., I, 329, 338, 377). The Jamaicans also showed fight (Church., II, 615). Some of the Indians who escaped from Hispaniola went over to Cuba, and when the Spaniards arrived there they attacked them again (*ibid.*, I, 363-4).

When the wretched natives could no longer withstand the hateful work imposed upon them they fled to mountains and

woods and lived on wild fruits (Angl., p. 215), others killed their children and hanged themselves, and the women dissipated their pregnancy with the juice of a certain herb. "Some threw themselves from high cliffs, down precipices; others jumped into the sea; others into rivers; and others starved themselves to death. Sometimes they killed themselves with their flint knives; others pierced their bosoms or their sides with pointed stakes" (Benzoni, p. 78). Oviedo (fol. 41) also states that the unhappy wretches poisoned and hanged themselves; and Moralis (p. 296) that the women destroyed conception.

The caciques seem to have had good chivalrous notions. When Guarionexus fled to the court of Maiobanexus, the latter preferred to have his country laid waste than to give up his friend to the Spaniards.

Columbus speaks of the intelligence of these people, and expresses his astonishment at the good account they could give of their surroundings (Major, p. 8). They were apt imitators, copying the Christians like monkeys (Benzoni, p. 23, and Chanca, p. 65). Judging by an example in the British Museum of a beautiful stone axe copied from an European model, Scillacio's statement (*op. cit.*, p. 85) that they can copy anything shown to them is well worthy of credence.

On one occasion an Indian messenger showed considerable acumen in getting out of the clutches of his hostile countrymen; he pretended to deafness, dumbness, and lameness, and by signs made them believe he was trying to get back to his country (Herr., I, 172).

If the historians are not using a figure of speech only, the Indians must have been very emotional. When Columbus lost his caravel, *Guacamari* and his followers wept (Church., II, 594), the same cacique also wept every time he spoke of Columbus' murdered companions (*ibid.*, 620). In Jamaica the people could also "cry and sob" (*ibid.*, 616).

The inhabitants of all the islands appear to have been most hospitable (Church., II, 612, 618, and Scill., p. 77).

The bad character given to the natives by Oviedo (fols. 39, 57, and 59) can only be explained by the light—or rather darkness—of his bigotry. Because they were idolators, he failed to see that they had even one redeeming virtue.¹

History.

Past events were kept fresh in the memory of the people by ballads called *areitos* (Andr. Mor., 289) which were sung at feasts

¹ When relating statements by Oviedo and others that the natives of Hispaniola were lazy, we must remember that travellers are only too ready to attribute idleness to savages; but Mr. Im Thurn ("Among the Indians of Guiana," p. 269) has put this question of the indolence of savages in its proper light.

by the chiefs and priests. They used to draw on the walls of the caves where they worshipped (Pane, p. 625), but whether this was intended to record events we are not informed. According to Pane, the people who first inhabited the island came out of a cave,¹ called *Cacibagiagua*, in the mountain *Canta*. Some of the men who emerged were caught by the sun and transformed into stones, birds, trees, &c. Once a chief, *Guagugiana*, sent out a man *Giadrucava* to gather a certain herb, called *digo*, to wash him, but this man was turned into a nightingale, called *Giahuba Bayiaci*. Then the chief getting angry proposed to abandon the cavern. They forsook the children, who for want of nourishment remained dwarfs, and went to *Matinio* (Martinique) where the men abandoned the women and returned to the island. The men being without women, naturally desired them. One day some neuter human beings were discovered sliding down the trees, these beings were caught with much difficulty, woodpeckers were then tied to certain parts of their bodies who pecked holes into them, and thus they became women. Their migration is to a certain extent confirmed by *Moralis* (p. 289), who says the natives came in their canoes from *Martinino* (Martinique), on account of their quarrels there. He says the island was first named *Quizqueia*, and then *Haiti*. *Quizqueia* means a great thing, so great that none may be greater, also large, universal, or all. *Haiti* means rough, sharp or craggy, and this name was given on account of the mountainous character of the island (*ibid.*). He also states (p. 298) that in the mountains of the extreme western end there were said to exist wild men, without fixed abode, without certain language, and without cultivating the ground. *Oviedo* (*op. cit.*, fol. 51) also refers to these people who lived in caverns, and were not subdued until 1504.

Pane says (*op. cit.*, p. 625) that the Indians called the island *Aiti*, and apparently themselves the same, and that other islanders called them *Bouchi*. [See p. 279.]

Archæology.

Schomburgk, when travelling in the island, came across, at San Juan de Maguana, a curious stone circle, which he describes as follows:—

"The circle consists mostly of granite rocks, which prove by their smoothness [? worn by rain] that they have been collected on the banks of a river, probably at the Maguana, although its distance is considerable. The rocks are mostly each from 30–50 lbs. in weight, and have been placed closely together,

¹ Captain T. H. Lewin ("Hill Tribes of S.E. India," Lond., 1870, p. 238) says that the Khyengs believe that their ancestors came out of a cave in the earth.

giving the ring the appearance of a paved road 21 feet in breadth, and as far as the trees and bushes, which had grown from between the rocks, permitted me to ascertain 2,270 feet in circumference. A large granite rock 5 feet 7 inches in length, ending in obtuse points, lies nearly in the middle of the circle, partly imbedded in the ground. . . . It has been smoothed and fashioned by human hands; and although the surface has suffered from the atmospheric influence . . . the cavities of the eyes and mouth are still visible." He compares the figure with that mentioned by Charlevoix, and says that "a pathway of the same width as the ring extends from it firstly due west and turns afterwards at a right angle to the north, ending at a small brook" (*Journ. Ethnol. Soc.*, 1854, Vol. III, p. 121). His supposition as to the figure being an idol is quite guesswork.¹

Astronomy.

On this point the historians tell us nothing. But we have a sort of side reference which would seem to imply that the aborigines did not take much account of astronomy. Ferd. Columbus, in speaking of the Guadeloupe Islanders, says: "For in other places they only reckon the day by the sun, and the night by the moon, whereas these women reckoned by other stars, saying when the Charles Wain rises, or such a star is north, then it is time to do so and so" (*Church.*, II, 635).

Arithmetic.

Regarding their powers of calculation, we have only the one record of Pane, who states that they cannot count beyond ten (p. 622).

Medicine.

Several of the writers state that the Spaniards suffered much from venereal disease, communicated to them by the Indians, but modern research appears to decide that this disease was known to Europe before the discovery of America.

Benzoni gives a very short account of the customs observed by the priests or doctors in sick cases, but in that he confirms Pane's descriptions. He adds that these medicine men have great authority, but that they generally doctor only the principal people (*op. cit.*, pp. 81-82). He also appears to infer that the smoke inhaled was tobacco smoke.

¹ In his interesting work on British Guiana, Mr. C. Barrington Brown describes (p. 144) a somewhat similar but smaller stone circle. The slabs forming it are undressed, 2 to 3 feet high, and 5 to 6 feet apart; the circle is a true one, 30 feet in diameter. On one slab a frog-like figure has been cut in very deeply. The Peruvians built stone circles, see *Atlas to Humboldt and Bonpland's Voyage*, Paris, 1810, fol., p. 107.

Pane gives us a very full account, which runs as follows (pp. 626, &c.) :—

“When a man is sick they bring him the *Buhuitihu*, that is, as we said before, the physician. The doctor is obliged to be dieted as the sick man is, and to look like him, which is done thus :—He has to purge himself as the sick man does, which is done by snuffing a certain powder called *cohoba* up his nose which makes him so drunk that he knows not what he does, and so says many extravagant things which they affirm is talking with the *Cemis*, and that they tell them how the sickness came.

“When they go to visit any sick body, before they set out from their house they take the soot off a pot or pounded charcoal, and black all their face, to make the sick man believe what they please concerning his distemper. Then they take some small bones and a little flesh, and wrapping them all up in something that they may not drop, put them in their mouth, the sick man being before purged with the powder aforesaid. When the physician is come into the sick man’s house he sits down and all persons are silent ; and if there are any children they put them out, that they may not hinder the *Buhuitihu* in performing his office ; nor does there remain in the house any but one or two of the chief persons. Being thus by themselves they take some of the herb *Gioia*,” &c., which will cause them “to vomit what they have eaten, that it may not hurt them ; then presently begin their song, and, lighting a torch, take the juice. This done, having stayed a little, the *Buhuitihu* rises up, and goes towards the sick man, who sits all alone in the middle of the house, as has been said, and turns him twice about, as he thinks fit ; then stands before him, takes him by the legs, feels his thighs, descending by degrees to his feet, then draws hard, as if he would pull something off ; then he goes to the door, shuts it, and says, ‘Begone to the mountain or to the sea, or whither thou wilt ;’ and giving a blast as if he blowed something away, turns about, claps his hands together, shuts his mouth, his hands quake as if he were a-cold, he blows on his hands, and then draws in his blast as if sucking the marrow of a bone, sucks the man’s neck, stomach, shoulders, jaws, breast, belly, and several other parts of his body. This done, they begin to cough and make faces, as if they had eaten some bitter thing, and the doctor pulls out that we said he put into his mouth at home or by the way, whether stone, flesh, or bone, as above. If it is anything eatable, he says to the sick man, take notice you have eaten something that has caused this distemper, see how I have taken it out of your body, for your *Cemi* had put it into you because you did not pray to him or build him some temple, or give him some of your

goods.¹ If it be a stone, he says, keep it safe. Sometimes they take it for certain that those stones are good and help women in labour, wherefore they keep them very carefully wrapped up in cotton, putting them into little baskets,² giving them such as they themselves eat, and the same they do to the *Cemis* they have in their houses. Upon any solemn day, when they provide much to eat, whether fish, flesh, or any other thing, they put it all into the house of the *Cemis* that the idol may feed on it."

If the patient dies, and has many friends, or was a lord of a territory, and can oppose the physician, for mean people dare not contend with him, they take the juice of the leaf of an herb called *Gucio*, and mix it with the dead man's nails and forehead hair pounded between two stones and "pour it down the dead man's throat and nostrils, and so doing, ask him whether the physician was the cause of his death, and whether he observed order. This they ask several times, till he speaks as plain as if he were alive, so that he answers to all they ask of him; . . . and they say the physician asks him whether he is alive, and how he comes to answer so plain; and he answers he is dead. When they have known what they desire of him, they return him to his grave, whence they took him to make this inquiry." They have another method to make the dead speak, by placing the body on a very hot fire covered with earth, but in this case the dead only answers ten questions. If the *Buhuitihu* has not done his duty the friends waylay him, and break all the bones in his body, and leave him for dead. "At night they say come abundance of snakes of several sorts," who, licking the physician's face and body, he recovers in a few days, and then tells the people that the *Cemis* came to his assistance. The deceased's friends "if they can catch him again they put out his eyes, and bruise his testicles; for they say none of these physicians can die, though never so much bastinadoed, if they do not cut out his testicles." In the other case when they uncover the fire, if the physician did not do his duty, the smoke after rising enters the physician's house, he himself gets sick, and his skin becomes diseased; these are considered signs that he did not do his duty, and the friends of the dead man then try to kill him.³

¹ The medicine men among the Abipones used similarly to hide thorns, worms, beetles, &c., in their mouths, and then pretended that these had been sucked by them out of the patient's body (Dobrizhoffer, "Gesch. der Abip.", Vienna, 1783, II, p. 326). Im Thurn ("Among the Indians of Guiana," p. 338) had a caterpillar taken out of his body by a *peaiman* (medicine-man).

² Im Thurn points out ("Among the Indians of Guiana," p. 423) that the Guiana Indians carry about certain worn stones, to which some superstitious value is attached.

³ The Payaguas occasionally sacrificed their medicine men when the latter were not successful with their patients (Dobrizhoffer, "Gesch. der Abip.", Vienna, 1783, II, p. 327).

Food.

They were apparently omnivorous. They devoured the small mammalia¹ indigenous to the island. The Indians generally eat great spiders, worms that breed in rotten wood,² and fish almost raw,³ for as soon as taken, before they roast it, they dig out the eyes to eat (Church., II, 590). Dr. Chanca also says they "eat all the snakes and lizards and spiders and worms they find upon the ground" (*op. cit.*, p. 68), "and such birds as they can catch of many kinds which abound in the island" (*ibid.*). They eat serpents "like unto crocodiles, saving in bigness," called *Iuannas*. This animal was evidently prepared with much care, being cleaned and washed, then rolled up and placed in a pot just big enough to hold it, a little water was added, and it was then boiled over a soft fire of sweet wood which gave little smoke. Of the fat "an exceeding pleasant broth or pottage" was made, and the eggs were boiled alone, (Angl., p. 192). There were not many lizards "for the Indians consider them as great a luxury as we do pheasants" (Chanca, *op. cit.*, p. 43). The Cubans also eat oysters (Church., II, 615).

But Benzoni gives us the best account of the mainstay of these natives, which was bread made from maize and from the roots we call cassava. His account of the preparation of the bread from maize is as follows: "The women, *molandaie*, who grind it, wet a quantity of this grain the previous evening with cold water, and in the morning they gradually triturate it between two stones. Some stand up to it, others kneel on the ground; nor do they care if any hairs fall into it, or even some *pidocchi*. When they have made a mass by sprinkling in water with the hand, they shape it into little loaves, either long or round, and putting them into some leaves of reeds, with as little water as possible, they cook them. This is the common people's bread; it lasts two days and then mildews. The chiefs' bread is made in the following way: after soaking and triturating the corn between two stones, the *molandaie* wash it with hot water and pick out the husk, leaving only the flour, which they grind as much as they can and then shape into small cakes. These are cooked in a round pipkin, applying fire under them by

¹ According to Wallace there are only two genera, the *Solenodon* and the *Capromys*. He calls the latter *hutias* and the former *agouta*. The Spanish historians speak of *utias* only and describe them as animals of about the size of rabbits.

² Cf. Im Thurn, who gives (p. 266) a whole list of insects eaten by the Guiana Indians.

³ The Tongans eat fish raw (A. St. Johnston, "Camping among Cannibals," Lond., 1883, p. 53.)

degrees." Benzoni goes on to tell us from his own experience that the "grinding is very severe work," and that although the chiefs' bread takes great trouble in making, it is only good when fresh and cold. In the woodcut with which he illustrates his method of making bread, two women are kneeling over the fire evidently baking, and the third woman, also kneeling, is evidently grinding the maize on a curved piece of stone or wood, having three or four legs, and known as a *metatl*, by means of an instrument which looks like a rolling pin.¹

The cazabi bread, according to Benzoni, is made thus: they take up fresh roots, "they peel them and cut them with sharp stones that they find on the beach, and putting them into a rag, they squeeze out the juice, which would be poison to anyone drinking it; then laying them on a great brick, like cakes of paste, they cook them on the fire, leaving them so long as they will hold together. Finally they put them into the sun to dry. They make some thick and some thin."² This, to my taste, is a wretched article of food, but if put into a dry place it would continue good for three or four years. The accompaniment of some moisture in the throat is requisite, else it is harsh and difficult to swallow."

The two other sorts of roots *battatta* and *haie* "are commonly cooked in the embers" (Benzoni, p. 86).

They had also a spice called *agi* (Chanca, p. 68) which they drank in water (Herr., I, p. 68).

Their *chichia* or what we should call *kava*, is made, according to Benzoni (p. 86), by the women, who grind the maize, then put it "into water in some large jars"; a little of the grain is rendered "somewhat tender in a pipkin," and then handed over to other women who chew it, spit it out "upon a leaf or platter and throw it into the vase with the other mixture. . . . It is then boiled for three or four hours, after which it is taken off the fire and left to cool, when it is poured through a cloth, and is esteemed good in proportion as it intoxicates. . . . They

¹ This method of reducing grain which at the time of the discovery was common throughout America, differs entirely from that followed in the Old World (see Stevens' "Flint Chips," p. 234). Strange to say, Baker found the American method in use at Cassala, thus ("Nile Tributaries of Abyssinia," Lond., 1867, pp. 78-79): "There are no circular hand-mills as among Oriental nations, but the corn is ground upon a simple flat stone, of either gneiss or granite, about 2 feet in length by 14 inches wide. The face of this is roughed by beating with a sharp-pointed piece of harder stone, such as quartz or horn-blende, and the grain is reduced to flour by great labour and repeated grinding or rubbing with a stone rolling pin."

² This account of the bread-making should be compared with that given by Im Thurn (pp. 260-263) of the bread-making of the Guiana Indians, who likewise make several kinds of bread.

also make wines of other kinds, of honey, of fruits, and of roots, but these do not intoxicate as the first does."¹

Oviedo mentions many varieties of fruits, but it is not clear whether he refers to those of the island or of the mainland.

Narcotics.

We have already seen (*Medicine*) that these aborigines had a powder, *cohoba*, the smoke of which they inhaled through their noses. We are probably not wrong in inferring that this powder was a preparation of the herb known to us as tobacco.

According to Jefferys (*op. cit.*, II, 11) the moist leaves of tobacco were spread on half-kindled coals, but Oviedo (*op. cit.*, fol. 71) simply says they make themselves drunk with the smoke of a certain herb like henbane. He describes the smoking through the nose, thus: "The instrument with which they inhaled the smoke was a forked hollow tube about a palm in length, and of the thickness of a little finger, well polished, well made, all of one piece. They inhaled the smoke as long as they could, in fact until they fell down drunk. Those who could not afford such tubes made use of reeds." Oviedo gives a drawing of this tube, and a very similar tube from Mexico exists in the anthropological collection in the British Museum. Oviedo calls special attention to the fact that the tubes or reeds are called *tobacco*, and not the plant smoked. Occasionally when a chief fell drunk as above, his women carried him away, but this was only when they had received special instructions to that effect beforehand.

It is remarkable that none of the travellers mention the smoking of pipes, or bowls. Benzoni says that *tobacco* was the Mexican name of the herb, and in describing the medicinal customs referred to, he does not give the tube any particular name. But if the aborigines did not smoke pipes they at least smoked cigars. The following is Benzoni's account of cigar-smoking (*op. cit.*, pp. 80-81):—

"When these leaves are in season, they pick them, tie them up in bundles, and suspend them near their fire-place till they are very dry; and when they wish to use them they take a leaf of their grain (maize) and putting one of the others into it, they roll them round tight together;² then they set fire to one end,

¹ On the Mosquito coast (H. A. Wickham, "Rough Notes," Lond., 1872, p. 189, and John Collinson, "The Indians of the Mosquito Territory," in *Memoirs of the Anthropol. Soc.*, III, 1870, p. 151) to this day at the *Mishla* feasts the drink (*mishla*) is prepared in the same way by chewing, &c. Compare the manufacture of the *chichia* with the preparation of the *chicha niascada* by the Sierra Indians of Peru, as described by Tschudi ("Peru," 1846, II, p. 179) and Im Thurn's description of the *paiwari* (pp. 263-264).

² Cf. Im Thurn (p. 318), cigarette-smoking.

and putting the other end into the mouth they draw their breath up through it, wherefore the smoke goes into the mouth, the throat, the head, and they retain it as long as they can, for they find a pleasure in it, and so much do they fill themselves with this cruel smoke that they lose their reason. And some there are who take so much of it, that they fall down as if they were dead, and remain the greater part of the day or night stupified."

We have seen under the headings of *Religion* and *Medicine* that tobacco was also taken in some form or other in order to produce vomiting, delirium, and general relaxation of the muscles and purging. From these results it would appear that tobacco was not merely inhaled or taken as snuff but also taken internally,¹ or that it was mixed with some other narcotic.

Crimes and Morals.

"Some say that these people were very great thieves, and that for every little fault their laws inflicted hanging." So says Benzoni. He believed they were honest; he expresses a wish that all Christians were equally so, and considered that the thieving must have been learned from the Spaniards. He is strengthened in his belief of the honesty of the Indians by imagining that until the Spaniards arrived they had nothing of value to steal from one another, forgetting that whatever they did possess was of value to the holder, and that although eatables, gold in the river beds, &c., were common to all, there was other property which could be stolen. But Columbus distinctly says (Church., II, 621) that the caciques used to steal one another's *cemis*; and Oviedo states that thieves were spitted on the branch of a tree and left to die (*op. cit.*, fol. 75), and that no one dared to intercede for them. The Watling Islanders on the contrary laid their hands on everything they possibly could (Church., II, 586).

Benzoni says in these countries there is very little chastity; and in few places are the girls or sisters attended to. They all sleep together like fowls (*op. cit.*, p. 82). At the time of Benzoni's visit the Indians were already greatly demoralised, and while allowing that chastity is not a savage virtue, we must remember that the destruction of Columbus' first colony was in a great measure attributed to the interference of the Spaniards with the native women (Chanca, p. 53). Oviedo states that some women were chaste and loved their husbands (*op. cit.*, fol. 72), and others most unchaste (fol. 74). He also states that *Guacanagari* had certain women with whom he com-

¹ Compare A. S. Taylor, "On Poisons," Lond., 1875, p. 803.

mitted the abominations, related by Pliny (Bk. X, ch. 62) [sic]; and that men who allowed themselves to be polluted were obliged to dress like the women,¹ and by whom they were hated (*op. cit.*, fol. 72). Incest (connection with mother, sister, or daughter) was unknown. When men went to gather gold they had to be continent (*op. cit.*, fol. 74).²

Religion.

Considering the general contempt with which the Spaniards treated the natives and their customs, we may congratulate ourselves on having comparatively fair accounts of the religion of these Indians. Columbus first of all says that "they are not acquainted with any kind of worship, and are not idolators;" and states that they believe he and his crew came from heaven (Major, p. 8), but later on he offers to ship as slaves "as many of these idolators as their Highnesses shall command" (*ibid.*, p. 15). Ferdinand Columbus' account of their worship is as follows: "Every cacique appears to have had a house apart from the town, in which there was "nothing at all but some wooden images carved by them, called *Cemis*, they repairing to perform certain ceremonies and pray there. In these houses they have a handsome round table, made like a dish, on which is some powder, which they lay on the head of the *Cemis*, with a certain ceremony; then through a cane that has two branches clapp'd to their nose, they snuff up this powder . . ." which "puts them besides themselves, as if they were drunk. They also give the image a name, and I believe it is their father's or grandfather's, or both, for they have more than one, and some above ten, all in memory of their forefathers . . ."³ The people and *caciques* boasted among themselves of having the best *cemis*, but objected to Christians entering these houses, and on occasions carried off the *cemis* and hid them in the woods; they appear nevertheless to steal each other's *cemis* (Church., II, 621). Some Spaniards one day having burst into one of these houses, and hearing the image speak, knocked it over, discovered a man concealed. The *caciques* were supposed to control their subjects by means of these *cemi*, as they begged the Spaniards not to let the people know of their discovery (*ibid.*). Herrera says that the image which the Spaniards overthrew was "hollow, and behind it was a hollow cane, like a trunk to shoot pellets,

¹ According to H. H. Bancroft ("Native Races of the Pacific," I, p. 585), among the New Mexicans such men were similarly obliged to dress like women.

² H. O. Forbes describes the solemn ceremonial which precedes the annual gold washing operations among the Bibicu tribes in Timor ("Naturalist's Wanderings," p. 467.)

³ Im Thurn (p. 396) says of the Guiana Indians "the supposed gods are really but the remembered dead of each tribe."

that reached to the corner of the house, which was garnished and covered with greens, where the person was hid who spoke what the cazique would have the *cemi* say" (*op. cit.*, I, p. 160).

Most of the *caciques* have also three stones which they were said to worship, one to help corn and all sorts of grain, a second which helps women to be delivered without pain, and a third which procures rain or fair weather according to requirement (Church., II, 621). See above, *Medicine*, the charm-stones.

According to Pane (Church., II, 622), they think there is an immortal Being, like heaven, invisible, and that has a mother, but no beginning, and this Being they call *Jocakuvague Maorocon*, and its mother they call *Atabei, Iermaoguacar, Apito*, and *Zuimaco* . . . "Almost all these people have abundance of *cemis* of several sorts; some have their father, mother, kindred, and predecessors; some figures cut in stone and wood, and many of both sorts, some that speak, and others that cause things to grow, some that eat, others that cause rain, and others that make the wind blow" (*ibid.*, 626). They pay great veneration to a grotto called *Giovorava*, out of which the sun and moon came, in the country of the *Cacique Maucia Tiuvet*, and "have painted it all after their fashion, without any figure but leaves and the like." Here they had two little stone *cemis* called (*Boinaiel* and *Maroio*), about a quarter of a yard long, "their hands bound, and they looked as if they sweated." These images were much honoured when rain was wanted, (Pane, *ibid.*, 625). Oviedo (*op. cit.*, fol. 75) also tells us that they prayed to their images for rain and good seasons.

Pane continues (*ibid.*, 628), the wooden *Cemis* are made as follows:—A man travelling, sees a tree shake its roots, this action frightens him, he asks who he is, and the tree refers him to a physician. Then the physician hurries along and gives it *cogioba*, asks it why it sent for him, whether it will go with him, and have a house built and endowed. That tree thenceforth becomes a *Cemi*, and is cut into shape according to its own directions.¹ An important *Cemi*, *Faragucaol* (Pane, *ibid.*, p. 630), was originally a certain creature that ran into a ditch and was found to be a beam which looked as though it had life in it.

The stone *Cemis* are of several sorts (Pane, *ibid.*, 629). Some the physicians take out of the bodies of those that are sick, and those are looked upon as the best to help women in labour.

¹ Compare this account of the making of a *Cemi* with the statement of Mr. Im Thurn at the Exhibition, 1886 ("On the Races of the West Indies," Journ. Anth. Inst., XVI, p. 195) that "at the present day the red men of the mainland are very apt when they see a piece of wood of curious natural form—suggesting, say, some animal—to take that wood, and, with more or less artistic touches, to complete its resemblance to that animal."

"Others there are that speak, which are shaped like a long turnip with the leaves long and extended, like the shrub bearing capers. Those leaves for the most part are like those of the elm. Others have three points and they think they cause the *Guica* to thrive . . ." The *cogioba* which they give to the *Cemi* is "to pray to it, to please it, to ask and know of the said *Cemi* what good or evil is to happen, and to beg wealth of it. When they would know whether they shall be victorious over their enemies, they go into a house, whither none but the chief men are admitted. The lord of them is the first that begins to make *cogioba* and to make a noise whilst he does it, none of the company speaking till he has done. His prayer being ended, he stands awhile with his head turned about and his arms on his knees; then he lifts up his head and looks toward heaven, and speaks. Then they all answer him with a loud voice, and when they have all spoken, giving thanks, he tells the vision he saw, being made drunk with *cogioba* he snuffed up his nose, which flies into his head, and says he has talked with the *Cemi* and shall obtain a victory, or that his enemies shall fly, or that there shall be a great mortality, or war, or famine, or some such thing, as occurs to him in his drunken fit" (Pane, *ibid.*, 629).

There are some funny stories told by Pane of these *Cemis*. *Baidrama*, in the time of the wars, was burnt, but being washed in *guica* juice "his arms grew out again, his body spread, and he recovered his eyes," but as his attendants did not give him *guica* to eat he made them ill. One *Cemi* named *Corocose* was fond of lying with the women. *Faraguvaol*, already mentioned, and *Opigielguowiran* were in the habit of running away. The former even ran away when bound in a sack. The latter had four legs like a dog, and when the Christians came he sought refuge in a morass, since which time he has not been heard of (Pane, *ibid.*, pp. 629-630).

They also had female *Cemis*. The *Cemi Guabancez* was a female made of stone. When she was angry she "raises the winds and waters, overthrows houses, and shakes trees." She had two female attendant *Cemis*, who carried out her orders (Pane, *ibid.*, 630).

Benzoni also gives us some interesting information on the worship of the Indians. On page 78 he says: "Touching the religion not only of this island, but also of all the other nations of the New World, they worshipped, and still worship, various deities, many painted, others sculptured, some formed of clay, others of wood, or gold, or silver; and in some places I have seen them made with a tail and feet, like our Satan." Oviedo says (fol. 69) "the variety of *Cemis* is too numerous to describe; they are made of gold, stone, wood, and earth." They were apparently

much attached to these *Cemis*, for when Chanca pretended to throw them on the fire they were much hurt (Major, pp. 65-66). He (Benzoni) states that in consequence of the priests destroying the idols, the natives hide them in caves and sacrifice "to them occultly." "They have (p. 79) a name for every one, regarding this as their patron on this subject, and that as their patron on that subject" But he says "these people only ask of their gods plenty to eat and drink, and good health, and victory over their enemies." He says the devil appears in various shapes and promises to fulfill their entreaties, and then does not do so, excusing himself on the ground "that he has changed his mind because they have committed some great sin."

"When the cacique of *La Española* wished to celebrate a feast in honour of his principal false deity, he commanded all his vassals, both men and women to come to him on a certain day, and on arrival at the appointed spot, they ranged themselves in order. The cacique then advanced and entered the temple, where the ministers were dressing the idol. There he sat down, playing on a drum, and all the other people followed; first the men painted black, red, and yellow, with plumes of parrot and other feathers, with ornaments of sea-shells round their necks, their legs, and their arms. The women were not painted at all; the girls were quite naked; the married women had a covering hanging from their waist. . . . Thus they entered the temple, dancing and singing certain of their songs in praise of their idol, while their chief saluted them with his drum. Then by putting a stick down their throats they vomited, so that the idol might see they had nothing bad either in their stomach or their breast. After performing these foolish ceremonies, they all sat down on their heels, and (p. 80), with a melancholy noise, they sang some more songs. Then some other women entered the temple with baskets adorned with roses and various flowers, and filled with bread, and they went round to all those who were singing and repeated a little prayer to them. The singers jumped up on their feet to answer, and when they had finished these songs, they began others to the honour and glory of their chief; after which they presented the bread to their idol. The ministers now took and blessed it, and shared it with all the people, as if it was a holy thing or good relic. Finally, every man, highly elated and content, returned to his own home.

" they worshipped two wooden figures as the gods of abundance. And at some periods of the year many Indians went on a pilgrimage to them. They had also another idol made with four feet,¹ like a dog, and they believed that when he was

¹ This is probably *Opigielguoviran* mentioned above by Pane.

angry he went away to the mountains, where, being found, they used to bring him back on their shoulders to the temple."

After death they believe they go to a happy vale which, according to Ferd. Columbus' description (Church., II, 621) would resemble Mahomet's heaven; but according to Pane (*op. cit.*, pp. 625-6) the dead are said to go to a place called *Coaibai*, which lies in a part of the island called *Soraia*; the dead feed on fruit of the size of a quince, and for the rest, their life is one of bliss and sensual pleasures. They wander during the night and hence natives do not stir out at night for fear of meeting them. The Indians called the spirits of the dead *opia*, and those of the living *goeiz*. Perhaps we may hazard the conjecture that these names explain their dreams, for, according to the same authority, they say sometimes a man would fight with an *opia*, and then find he had got hold of a tree, and at other times he would think he was lying with a woman, and there was no one there. Since the Christians took their *Cemis* away, spirits no longer appear to them (Moralis, p. 290).

With regard to ceremonies carried on in grottoes Schomburgk (Journ. Ethnol. Soc., 1854, Vol. III, p. 121) describes charcoal and coloured drawings in the calcareous caves of Pommier, which he considers Indian work. Descourtiz also ("Voy. d'un Naturaliste," Paris, 1809, Vol. II, pp. 18-19) says rock carvings of grotesque figures are to be found in the caves of Dubeda, Gonaïves, in those of Mont Selle, near Port-au-Prince, and in the Quartier du Dondon, near Cap François (C. Haïtien).

It would appear that some of the historians accepted every carved figure, or drawing of a figure, as representing a god. Oviedo (fol. 69) thus speaks of the hideousness of one particular idol which they figure everywhere, and not only paint on one part of the house but also grave on the stools. A modern writer (W. Walton, "Present State of the Spanish Colonies," London, 1810, Vol. I, pp. 164-170) apparently falls into a similar error in describing what is apparently a meal pounder (or some allied instrument), and lays stress on the figure-head, which is of course only an ornament.

Superstitions.

They believed that the sun and moon came out of the grotto called *Giorovava*, in the country of the cacique *Maucia Tiuvet* (Pane, p. 625, Benzoni, p. 80). Their tradition of the making the sea runs thus:—There was a man name *Giaia*, who killed his son *Giaiael*, for attempting to kill him. The son's bones were put into a calabash, and after a time, when the father went to look at them, they were turned into fish, and he and his wife resolved

to eat them. In the meanwhile four brothers (born at one birth) came during Giaia's absence and eat the fish, and while so doing they perceived him returning, and so going about in that hurry to hang up the calabash, they did not hang it right, so that there ran so much water from it as overflowed all the country, and with it came abundance of fish, and hence they believe the sea had its original (*ibid.*, p. 624). Pane says these superstitions are reduced to song (*ibid.*, p. 626). Benzoni (*op. cit.*, p. 80) mentions a pumpkin kept as a relic, which had come out of the sea with all the fish in it. Pane also tells us of a tradition that a clad people should come and rule over them and kill them, and that they should die of hunger. This was originally considered to be the Caribs, who, however, only plundered and fled, and then they thought it must be some other people, and then they found it was the Spaniards that were meant (*ibid.*, p. 631). Benzoni tells the same story (*op. cit.*, p. 22), and adds that on the arrival of the Spaniards this tradition had evidently been forgotten. Moralis (*op. cit.*, p. 289) says this tradition was embodied in a song, and that they afterwards sang it with mourning.

Magic and Witchcraft.

Mr. Shepherd ("The Island of San Domingo," Hunt's Merchants' Mag., N. York, 1863, pp. 361-363) mentions an old parchment, in the possession of the Archbishop of Santo Domingo, which describes the trial of some Indians for " . . . invoking spirits by the aid of a liquid, distilled from a plant called Zamia, which also contained a fibre that the Indians made into a garment they wore to assist in the working of the charm derived from the liquor. Under the influence of this potation, and enveloped in a robe of Zamia, the queen of the tribe retired to a cavern near the sea coast, and consulted the spirits of her ancestors with regard to matters of state, each year at the vernal equinox, or new season of the Indians." This information is given for what it is worth.

Government.

"There were four principal kings or caciques to whom all the others were subject. The names of those four were *Caunabo*, *Guacanagari* (*Guacamari*), *Behechico*, and *Guarionex*; each of these had under him 70 or 80 other little lords; not that they paid tribute or gave anything, but were obliged whensoever called upon, to assist them in their wars and till the ground" (Church., II, 619). Herrera says there were five great sovereigns (*op. cit.*,

I, 67). The commands of these caciques were obeyed to the letter (Church., II, 592, and Herr., I, 64).

When *Guacanagari* came on board Columbus' vessel on the first voyage, he had with him two old men who spoke to and for him, and apparently he only spoke to his people through such men. A custom of this sort would serve to impress the populace with awe, and the frequent allusions to the extreme reverence the people paid their chiefs may be accepted as a tolerable proof of the unlimited power with which they controlled their subjects.

Women were evidently not debarred from government, for we have the case of *Anacaona*, the wife of King *Caunaboa*, who was also the sister of *Bohechico*, King of *Cibana*. Her husband was imprisoned by the Spaniards, and she succeeded to her brother's throne (Major, p. 233, and Angl., pp. 191–192).

"They leave the inheritance of their kingdoms to the eldest sons of their eldest sisters. If she fails, to the eldest of the second sister, and so of the third if the second fail. For they are out of doubt that those children come of their blood, but the children of their own wives, they count to be not legitimate. If there remain none of their sister's children, they leave the inheritance to their brothers, and if they fail, it descendeth to their own sons. Last of all, if all these fail, they leave it to the most worthy and powerful" (Moralis, p. 301). Oviedo (*op. cit.*, fol. 74) and Benzoni (*op. cit.*, p. 82) confirm this.¹

Customs.

The people howled when Guarionexius was taken captive (Angl., 191). When a king's son is born the natives of the neighbourhood repair to the queen's chamber and salute the child with high-sounding titles. Bechicus Anacacoa was also called *Tureigua Hobin*, meaning a king shining as bright as brass; *Starci*, bright; *Huibo*, highness; *Duiheynequen*, a rich flood. The king is always to be spoken of with the full number of his titles (Moralis, 300). At Cuba first the men then the women came to kiss the hands and feet of the Spaniards (Church., II, 589). The Indians of Hispaniola laid their hands on the Spaniards' heads by way of honour (Church., II, 592). When the Cacique *Guacanagari* and Columbus first met the former and his two men (counsellors), they neither ate nor drank the food offered, but touching the cups with their lips and tasting the food they passed it on to the mob who did eat and drink (Church., II, 593). They were all very grave and the two old men observed

¹ Cf. Im Thurn, p. 185, "Descent in the Female Line among the Arawaks."

the king's mouth and spoke for and to him (*ibid.*). *Guacanagari* had lots of attendants. His son went at some distance behind him (*ibid.*). The exchange of presents was evidently customary, for on first meeting Columbus received a girdle from *Guacanagari* (*ibid.*).

Property.

Columbus (Major, p. 13) tells us, "I have not been able to learn whether they have any property of their own. It seemed to me that what one possessed belonged to all, especially in the matter of eatables;" and Benzoni corroborates this saying (*op. cit.*, p. 83), "and as to eatables, everybody gives to whosoever goes to his house," and of gold and silver, he says they only had to go to "the mine and get as much as they liked, as people do at a spring of water;" but as we shall see (*Personal Ornaments*) gold was not held in a very high estimation by them.

On travelling to *Cibao* with Columbus, the Indians from *Isabella* "went into the houses, took what they liked best, and yet the owners were not at all displeased, as if all things were in common. In the like manner, the people of the country, coming near to any Christian, would take from him what they thought fit, thinking our things had been as common as theirs. But they were soon undeceived" (Church., II, 612).

Scillacio says, "All things are held in common" (*op. cit.*, p. 83). The other historians say nothing about the possession of property. It is doubtful whether this community of possession extended beyond the lower class, for we have seen that caciques possessed and stole *Cemis*, and that men were impaled for theft. [For distribution of property see *Government* and *Burials*.]

Trade.

Dr. Chanca (*op. cit.*, p. 64) says, "The Indians barter gold, provisions, and everything they bring with them for tags of laces, beads, and pins, and pieces of porringer, and dishes." It can hardly be supposed that they learnt to trade from the Spaniards, for Columbus distinctly says, when speaking of their canoes (Major, pp. 9-10), "they navigate among these islands, which are innumerable, and carry on their traffic."

Angleria (*op. cit.*, V, p. 178) also states that the *Cibanas* and their neighbours barter amongst themselves gold, spice, &c., for pots, dishes, stools, &c.; and Moralis (*op. cit.*, p. 290) refers to the selling by common people.

The Jamaicans, when Columbus visited them, after first offering to fight, "followed in their canoes to trade" (Church., II, 615).

War.

On the east coast the natives, when approaching to attack, "spake out loud with terrible voice" (Angl., p. 175), and would come on "with terrible cry" (*ibid.*, 199). These were the *Ciguaians* and *Cavnaboa's* people. They daubed themselves previously to fighting. The latter on one occasion were ranged in battle array in five divisions (*ibid.*, 187). If the accounts are not exaggerated they would muster up to 6,000, 8,000, and 15,000 strong (*ibid.*, 191 and 199-200).

Columbus says (Major, p. 6) "their only arms are reeds cut in seeding time, to which they fasten small sharpened sticks;" but Chanca (*op. cit.*, p. 61) states that they had *cross-bows*, from which they discharged darts with considerable skill; he mentions also the finding of a man with a gaping wound in his shoulder, caused by a dart, so that he had been disabled from fleeing any further" (*ibid.*). We are also told that they possessed "bows and arrows, long and sharp like javelins, made hard at the ends with fire" (Angl., p. 175), and again "they fought with clubs, arrows tipped with bones, and spears made hard at the ends with fire" (*ibid.*, p. 187). Ferd. Columbus informs us that they had cudgels instead of swords, bows made of yew, almost as big as those of France or England, the arrows of small twigs growing out of the ends of canes, which are massive and very straight, about the length of a man's arm and a half; the arrow is made of a small stick hardened at the fire, about a quarter of a yard and a half long, at the end whereof they fix a fish's tooth or bone, and poison it (Church., II, 597); and later on he says again that poisoned arrows were used on the south coast (*ibid.*, II, 618). After the arrival of the Spaniards they fixed nails on as spear-heads (Herr., II, 190). Finally Oviedo (fol. 39) describes long hard wooden swords, two fingers thick, pointed at both ends, and with a guard and used like a two-handed battle-axe; he mentions also short sticks used as darts, the points of which split and break off, causing bad wounds. It is not clear, however, whether these two latter are Carib or Haytian weapons. Stones appear also to have been used (Herr., II, 190).¹

A curious light is shown on their method of fighting by the following description of an encounter recorded by Herrera (*op. cit.*, I, p. 300):—

"At *Higüey* an Indian challenged a Spaniard, the Indian only

¹ The use of stones as missiles is common among savages. The Australians are almost unerring shots, and so are the South Sea Islanders; according to H. O. Forbes ("Naturalist's Wanderings," pp. 242 and 462), the Kubus in Sumatra and the Bibuçu in Timor are wonderfully accurate marksmen with stones.

pointed his arrow, and shifted from side to side to avoid the stones, and to prevent the Spaniards coming close to make use of his weapons;" the Spaniard "darted his spear at him, thinking he had struck him through, but the Indian stepped aside, and went away scoffing at him."

Hunting and Fishing.

Beyond the bare mention of the fact that the natives brought fish, parrots, &c., to the Spaniards when they first landed (Muñoz, p. 220); that the natives hunted the *utias* by burning the grass to drive them out (Herr., I, 66, Oviedo, fol. 38); and that they were expert fishers and also given to hunting (Moralis, p. 290); we have no knowledge at all as to the manner in which the aborigines hunted or fished.

We have, however, some valuable pieces of information on these arts as practised by the Cubans. The latter captured parrots in this wise:—They "set a boy of ten or eleven years of age on a tree with a live parrot and a little grass or straw on his head, when he touched the parrot's head with his hand it cried out, the others, that were so numerous, hearing it, resorted thither, and, lodging on the tree, the boy, who had a small rod in his hand, with a noose at the end of it, clapped it about each parrot's neck, they imagining that the rod had been a twig of the tree, and drawing them to him, wrung their necks and let them fall, till the ground underneath was covered with them, and thus he might kill thousands, for as long as the parrot that was tied made a noise, the others never left the tree" (Herr., II, 14).¹

These Cubans also possessed nets and fishing-tackle (Church., II, 588), and were in the habit of visiting uninhabited islands to hunt and to fish (*ibid.*, p. 590). They had also fishhooks (*ibid.*, p. 616). It is remarkable that they made use of the peculiarity of sucker-fishes, which they called *reves* (?), in order to catch both other fish and turtles. These fishes when tied "by the tail run themselves against other fish, and by a certain roughness from the head to the middle of the back, they stick so fast to the next fish they meet, that, when the Indians perceive it drawing their line, they draw them both together" (Church., II, 616).

According to Sebastian de Ocampo, at *Xagua*, in Cuba, fish were pent up in the harbour as safe as if they had been in fish-ponds, being enclosed with reeds or canes, stuck in the ooze very close together (Herr., I, 323).²

¹ Cf. Samoan pigeon catching (Turner's "Samoa," Lond., 1884, p. 127.)

² Cf. The salt-water artificial fish-pools at the Island of Peru, Gilbert Group (Turner's "Samoa," p. 298).

Muñoz (pp. 235 and 245) mentions twice, that the natives at Hispaniola brought Columbus venison, by this he must have meant the flesh of the *utias* already referred to (*Food*).

Agriculture.

Agriculture was so well established that they could no longer exist without its practice, and when in consequence of the cruelties of the Spaniards the aborigines "refused to sow their lands with any grain for making bread, but had destroyed all that was left of the harvest" (Benzoni, p. 26, and also Angl., p. 185), the wretched people suffered very much more from starvation than did their oppressors. We have numerous and repeated references to the cultivated lands, and there is little doubt as to the great extent of their plantations (Muñoz, pp. 221, 227, &c., Benzoni, Oviedo, &c., &c.).

As we find to be the case among other races who have arrived at this stage of progress they had a vague tradition that agriculture was an introduced art.¹ They believed that originally they had not been in the habit of cultivating *iucca* and *maize*, but had been content with other products growing wild on the island. The *iucca*, they said, was first found by a wise man, *Bohuitihu*, who, by transplanting it to his garden, improved its quality. At first it was deadly poison to all who ate it raw, but perceiving it to be of pleasant taste they persevered in attempts to make it useful, until finally they discovered that the juice was poisonous (Moralis, p. 299). The *maize* they considered to have been likewise chosen from among the seeds of nature (*ibid.*, p. 300.)

The implement for cultivating the soil was simply a stave hardened in the fire, and which they called a *coa* (Herr., I, 184); Oviedo (fols. 102-103), calls it a *macana*. This tool was apparently used for this purpose only, and not for fighting; for Angleria (p. 202) tells us that after the defeat of the *Ciguaniens* one of the chiefs brought the Lieutenant 5,000 men, "without weapons, saving only such instruments as they use in the tillage of their ground."

Dr. Chanca says they "neither know how to dig, nor have the means of digging more than a hand's depth" (p. 69), but this statement refers to mining operations. As might have been expected there were certain fixed periods during which cultivation was carried on (Angl., p. 215). In Cuba we are told the natives grubbed the ground before planting the *iucca* (Herr., I, 46); but the operation was more probably one of simply clearing

¹ Cf. "Orig. of Agriculture," Journ. Anthropol. Inst., XVI, p. 105.

by burning. In Hayti the ground was not touched until after rain, when the soil was soft (Oviedo, fol. 102). Benzoni (p. 83) states "they do not prepare the earth for sowing the grain, but making a small hole they put in three or four grains, and covering it over suffices" while Oviedo (fols. 102-103) tells us they only cultivated land which originally grew timber or canes, the natural prairie not being considered fertile. The land was cleared by burning. The seed of the maize was dibbled a pace apart between each hole, the hole being made by a stick worked with vertical motion, and the seed to be sown was carried in a little bag hanging from the cultivator's neck (*ibid.*). In some provinces maize was harvested twice a year (Benzoni, p. 83). Depredatory birds were frightened from the fields by children who sat in sheltered stages in the trees and where they kept up a continual shout (*ibid.*).

The plant of the root *iucca*, from which they made their *carabi* bread was the second staple crop. Cuttings about two feet long were planted "in heaps of earth called *conuchi*,¹ and at the end of two years they form a large root." These roots are not taken up until required for bread-making, as they soon spoil (Benzoni, p. 85). Angleria (p. 280) gives a somewhat more detailed account of the preparation of the soil for *iucca* planting, but in this case it is not clear whether he is describing the methods in use among the Haytians or among the aborigines of the mainland.

They also cultivated the *battata* (sweet potato) and *haies* (yams) (Benzoni, p. 85, and others, also Oviedo); and numerous other less important vegetables. Ferdinand Columbus, in speaking of the Cubans (Church., II, 589), believed that cotton was not cultivated, but grew naturally. If it grew wild in Cuba and the natives made use of it in that state, the same conditions would probably hold good for Hispaniola, but cotton was so largely in use in all the islands that we may consider it was to a certain extent domesticated.

Irrigation was also extensively practised. Moralis (p. 301) tells us that in *Xaragua*, in *Hazua*, part of *Caiabo*, in the lake region, in *Yaquino*, part of *Bainoa*, there was little rain, and "in all these regions are fosses or trenches made of old time, whereby they convey the water in order to water their fields, with no less art than do the inhabitants of New Carthage and of the kingdom of Murcia."

Judging from an incident related by Pane (p. 632) the value of the fertilising property of urine was understood.

¹ On the Orinoco cassava plantations, or clearings generally, are called *caucos* (H. A. Wickham, "Rough Notes," pp. 21, 46, 59, 74).

We have no record as to the division of labour between men and women in the field work.

Domestic Animals.

Although at Cuba and at St. Mary's the inhabitants had tame dogs (Church., II, 588, 589, 617), none are mentioned as existing in Hispaniola. If, however, by *Zuruquia* Dr. Chanca means *Xaragua*, then the Haytians may have had domesticated fowls, &c., for in describing the island he says (p. 43) "no kind of domestic fowl has been seen here, with the exception of some ducks in the houses of *Zuruquia*."

The natives were much troubled with *nigues* or *jiggers*, which got into their limbs and bodies (Benz., p. 87) and they also suffered from lice, which occasionally fell into the dough (*ibid.*, p. 84).

Marital Relations.

These islanders were polygamous. Columbus states it seemed to him "the men were content with one wife, except their chief or king to whom they give twenty" (Major, p. 13). Pane says:—"They used to have two or three [wives], and the great men twenty-five or thirty" (Church., II, p. 633). Angleria tells us that *Bechico Anacacoa* had thirty wives and concubines (*op. cit.*, p. 190), and Moralis mentions that the chiefs take as many wives as they please (*ibid.*, p. 301). According to Oviedo (fol. 72), all those who could afford it had more than one wife, whilst the caciques had as many as they pleased; finally, Benzoni relates:—"The Indians take as many wives as they like, though one is the principal and commands all the rest" (*op. cit.*, p. 82). But Oviedo, again, contradicts this last statement, for, according to him, the cacique's wives all lived, ate, and slept with him together, under one roof, on terms of equality among themselves, and although there was one generally better beloved or nobler than the rest, this did not give her any right or title over the co-wives (*op. cit.*, fol. 74).

"When the women have an infant, they carry it to the sea shore, or to a river to wash it, and without any further ado they suckle their children" (Benzoni, p. 83).

According to Columbus the women seem to work more than the men (Major, p. 13). The women also ground the maize, made the bread, and prepared the kava (Benzoni, pp. 85 and 86). Professor Mantegazza ("L'Amour dans L'Humanité," Paris, 1886, p. 227) says that Columbus found marriage between relations of the first degree illegal in Hayti. We have been unable to find any evidence for this statement.

Education.

The chiefs gave their children to the wise men to be taught, as Moralis (*op. cit.*, p. 289) puts it, the origin and success of things and to learn to recite the deeds of their ancestors in peace and war.

Games and Amusements.

We have frequent references to their dancing and singing, although Benzoni only mentions it in connection with their worship (*op. cit.*, pp. 79 and 83). But dancing and singing were resorted to as matters of pleasure. According to Moralis (*op. cit.*, p. 289) they sing songs and dance to them, and play on timbrels made of fish shells. "They exercise themselves much in dancing, wherein they are very active, and of greater agility than our men, by reason they give themselves to nothing so much, and are not hindered with apparel, which is also the cause of their swiftness of foot" (Moralis, p. 289). Except on occasions of public rejoicings, such as a marriage of a cacique, or a victory after a battle, the men and women attended the dances separately (Oviedo, fol. 69.) During the dance men and women supply the dancers with drink, and when the dances are completed they are all dead drunk, which only happens when the song is a solemn one and not tedious (*ibid.*, fol. 71). Angleria describes the festivities which were held when *Bechico-Anacacoa* returned to his province with the Spanish lieutenant. The chief's wives received him "bearing in their hands branches of date trees, dancing and singing;" these branches which "they bore in their right hands when they danced they delivered to the lieutenant with lowly courtesy and smiling countenances." On this occasion (Oviedo, fol. 70) 300 virgins took part in the dance. The Spaniards were introduced to a common hall where "after many dancings, singings, maskings, runnings, wrestlings, and other tryings of mastery," two bodies of men fought before them, in which four men were killed (*op. cit.*, p. 190).

Scillacio's description of dancing is as follows:—"Several women at once, having their hair confined under wreaths and turbans, start off from the same line sometimes with an ambling, sometimes with a slower movement. The plates of metal which they wear attached to their fingers are mutually struck against one another, not merely in sport, but for the purpose of producing a tinkling sound. They accompany this sound with a voice not deficient in modulation, and singing that is not wanting in sweetness; and in a gracefully voluptuous manner, through

winding mazes, execute a languid dance in beautiful order, with multiform involutions, while no one claims a conspicuity above her companions Being at last both excited and fatigued by the sport, they hurry forward with equally accelerated steps, and in a more petulant and frolicsome mood, and with voices raised to a higher pitch, finish their dance " (p. 89).

The chief game, however, was one played with a ball. According to Oviedo (fol. 86-87, *op. cit.*) every village had a cleared space for playing the game of *batos*, surrounded by stone seats—but for the caciques pretty carved stools were placed. The ball was made by boiling the roots of certain plants, was black, and from the description appears to have been indiarubber. Sides are taken of 10 or 20 each, and he compares the game to football, only the ball is propelled by the head, neck, or shoulder, but most frequently by the thighs or knees, and must not touch the ground to be considered well played. If it falls dead, then the side which has allowed it to do so, lose the game. They were wonderfully skilful at this game. The men and women never played together but sometimes the men play against the women, the young married women who thus played changing the long apron for a short one. According to Herrera (*op. cit.*, I, 166) the ball was made of the gum of a tree.¹

Communications.

The modes of communication were simple. There were no roads, "for the Indians make their ways broad enough but for one man to pass at a time" (Church, II, 612), and the existence of these purely primitive pathways is confirmed by an incident in a revolt mentioned by Herrera (I, 303), in which he states that a soldier met twelve Indians, "one after another, as is usual with them, nor could they go otherwise by reason of the narrowness of the valley."

In spite of these narrow pathways it was evidently the custom for the chiefs to be carried in a sort of litter, for Columbus tells us that the *Cacique Guacamari* was so carried (Church, II, 592 and 593). This chief's son was carried on the

¹ Cf. McNair, "Perak and the Malays," Lond., 1882, pp. 262-3. "They are very expert, too, in tossing the raga, or wicker-ball, which is thrown in the air to one of the party, and the object then is to keep it up, this being done with hands, feet, shoulders, or knees, every part of the body being brought into play to keep the elastic ball from falling to the ground. Their dexterity over this is wonderful" It greatly resembles our football. Im Thurn says the Guiana Indians have a game of ball, but he does not describe it. The New Mexicans had a game of ball which was played in almost exactly the same way (Bancroft, "Native Races," I, 586); and the Nahuatl nations had specially prepared grounds on which to play this identical game (*ibid.*, II, pp. 297-8).

shoulders of a man of note, and the chief's brother, who walked on foot, was led under the arms by two great men (*ibid.*). After the conquest the Indians had to carry the Spaniards about on their shoulders (*ibid.*, p. 620), and *Guarionexus*, when pardoned for revolting, was carried home on his people's shoulders.

Clothing.

Doctor Chanca says: "They all . . . go naked as they were born, except the women of this island, who some of them wear a covering of cotton which they bind round their hips, while others use grass and leaves of trees. When they wish to appear full dressed both men and women paint themselves, some black, others white, and various colours, in so many devices that the effect is very laughable; they shave some parts of their heads, and in others wear long tufts of matted hair, which have an indescribably ridiculous appearance" (Major, p. 64). Columbus tells us: "Both men and women go as naked as they were born, with the exception that some of the women cover one part only with a single leaf, or grass, or with a piece of cotton, made for that purpose" (*ibid.*, pp. 5-6). In describing a festival, Benzoni (*op. cit.*, p. 79) says the men were "painted black, red, and yellow, with plumes of parrots' and other feathers, with ornaments of sea-shells round their necks, their legs, and their arms. The women were not painted at all; the girls were quite naked, the married women had a covering hanging from their waist," and elsewhere (*op. cit.*, p. 83) he states, "respecting clothing they all go naked." Chanca (*op. cit.*, p. 37) also says, they have the hair "clipt irregularly, and paint their heads with crosses and a hundred thousand different devices, each according to his fancy, which they do with sharpened reeds." According to Angleria (*op. cit.*, p. 190) at Xaragua the women "were all naked, saving that their privie parts were covered with breeches of Gossampine cotton; but the virgins having their hair hanging down about their shoulders, tied about the forehead with a fillet, were utterly naked." But the women of the upper class wore the apron down to their ankles (Oviedo, fol. 73). And at Cuba (Church, II, 617) some of the sailors said they saw a man "clad with a white coat or vest down to his knees, and two that carried him had them down to their feet, all three as white as Spaniards." The Haitiens were said to cover themselves with the inward bark of the palm trees to keep off the rain (Herr., I, 74). The *Ciguayos*, a mountain people, wore their hair down to the waist (*ibid.*, I, 181).

Personal Ornaments.

Oviedo (fol. 69) says they painted (? dyed) the figures of the *cemis* on their bodies, and their rings had representations of *cemis* on them. Dr. Chanca states that he "saw one root of ginger, which an Indian wore hanging round his neck," but whether this was as an ornament or a fetish is not mentioned.

At Porto Rico it would appear only the chief men or *caciques* wore a piece of gold hanging on the breast (Herr., I, 378.)

At Samaná Bay "the hair was worn very long and hung in a bag made of parrots' feathers," and also long "as the women in Spain wear it, and behind on the crown of the head, they had plumes of parrots' or other birds' feathers" (Church., II, 596). The inhabitants here were, however, probably Caribs.

The Haytians appear to have had a quantity of jewellery and other personal ornaments. Columbus received on one occasion "605 pieces of jewellery of various colours, and a cap of similar jewel work which I think they valued very highly" (Chanca). "Among the 605 pieces of jewellery were eight strings of small beads made of white, green and red stones, one string of gold beads, one regal crown of gold . . ." (Churchill, II, 610). Dr. Chanca continues: "The Indians beat the gold into very thin plates, in order to make masks of it, and set it in a cement which they make for that purpose. Other ornaments they make of it to wear on the head, and to hang in the ears and nostrils, and for these also they require it to be thin. It is not the costliness of the gold that they value in their ornaments, but its showy appearance" (Major, p. 55). The visor masks, says Columbus, were furnished "with eyes, nose, and ears of gold" (Churchill, II, 595). Scillacio says that the gold was beaten out on a cylindrical stone highly polished. He also refers to the low estimation in which they held gold (*op. cit.*, p. 83). The first woman they caught had a plate of gold hanging at her nose² (Church., II, 592), and some of the Indians had "small grains of gold hanging at their ears and nostrils" (*ibid.*). Columbus was also presented with a "girdle, not unlike those used in Spain though differently wrought" (Churchill, II, 593). "The girdle was adorned with small fish-bones, like seed pearls, curiously wrought, four fingers broad" (Herr., I, 68). Scillacio speaks of a "dozen belts polished with admirable art, and some of them variegated with thin plates of gold, interwoven in the cotton fabric with wonderful skill" (*op. cit.*, p. 61). Elsewhere (p. 83) he states the gold was made into wreaths and turbans for the women. We hear also of "several things in gold," and "of

² See wood-cuts of nose ornaments, p. 198, of Im Thurn's "Among the Indians of Guiana."

other pretty things which hung about their necks" (Church., II, 595). Also of Indians with plates of gold on their head (Herr., I, 74). *Guacanagari* and his subject chiefs had crowns of gold (*ibid.*, 76). The plates of gold were not cast but beaten between two stones. They evidently set a great value on silver (Herr., I, 76). The same author tells us that they made use of a red dye from a fruit of a tree called *Bisa* to protect [*sic*] themselves from the sun, or when they were in war (*op. cit.*, I, 184).

Burials.

When a *cacique* died two (or more ?) women were buried with him alive, not because they wished it, but because they were forced to. So Oviedo tells us (*op. cit.*, fol. 73). *Moralis* says: The best beloved of the King's wives or concubines are buried with him. When *Bohechico Anacacoa* died his sister ordered *Guanahattabenechina*, the fairest wife and her two waiting maids, to be buried with him. This beautiful woman was buried "with all her jewels, and twenty of her best ornaments. Their custom is, to place beside every of them in their sepultures, a cup of water and a portion of the fine bread of *cazabi*" (*op. cit.*, p. 301). But to come back to Oviedo, we find that the custom of immolating the wives was not general throughout the island. In other cases, when a *cacique* died his body was tightly enveloped in cotton bands bound round from head to foot. He was placed on a little stone in a hole dug in the ground like a cave the roof of which was supported by timber, so that no earth should touch him, and with him were buried his jewellery and other things dear to him during life. The obsequies lasted fifteen to twenty days, the neighbouring Indians and chiefs coming to pay the deceased honour, funeral orations were composed describing his great deeds, and his [personal] property was divided among the visitors (*op. cit.*, fol. 73).

The mode of burial apparently differed among the kingdoms. Ferdinand Columbus enumerates various ways not only of burial but also of helping the wretched beings to start on their last journey. In some cases the *cacique's* body is opened and dried at the fire, "that he may keep whole. Of others they keep only the head. Others they bring in a grotto, and lay a calabash of water and bread on his head." *Caciques* were burnt in the house where they died, but strangled when they are at the last gasp. Some are turned out of their house, and others put into their hammocks, with bread and water, and left to die, and some who are dangerously ill are taken before the *cacique*, who decides whether they are to be strangled or not (Church., II, 621). Sir Robert Schomburgk claims to have discovered an Indian burial

ground in the Valley of Constanza ("Athenæum," 1852, pp. 797-799). On his own showing he did not examine the ground, nor did he get any skulls, but he asserts it to be an Indian burial ground, apparently because there are above 1,000 mounds, and because the present inhabitants say it is. This, of course, is no evidence.

The Spaniards found on several occasions heads wrapped up with great care, sewn up in baskets. Heads thus preserved were supposed to have been those of parents or of others held in veneration (Major, pp. 52-3).

It is doubtful whether these people buried the bodies of their enemies, for while Herrera states that the murdered Spaniards of the first expedition were buried (*op. cit.*, I, 113-114). Chanca mentions the finding of the *unburied* bodies (Major, p. 45).

Poetry and Music.

History, such as it was, and the deeds of their forefathers were handed down to them in certain meters and ballads called *areitos*. "They have also songs and ballads of love, and others of lamentations and mourning, some also to encourage them to the wars, with every one of them their tunes agreeable to the matter" (Moralis, p. 289). The same authority states that *Anachaona* "in making rhymes and ballads was counted a prophetess among the best" (*op. cit.*, p. 301).

"When they sing these songs, they play upon an instrument called *Maiohavan*, made of wood, hollow, strong, yet very thin, and as long as a man's arm, that part where they play on it is made like a smith's tongs, and the other end like a club, so that it looks like a calabash with a long neck. This instrument they play on is so loud, that it is heard a league and a-half off; and to that music they sing those songs they have got by heart. The chief men play on it, who learn it from their infancy, and so sing to it according to their customs" (Pane, p. 626).

The above drum or gong is very different from that described by Oviedo, which is made of a hollow cylindrical piece of wood with a rectangular hole on one side of the cylindrical surface and another hole in the form of an H opposite to the first. The H hole is placed uppermost and when beaten with sticks makes a "bad noise." Oviedo also says there is only one tune and one time kept in their songs (*op. cit.*, fol. 70). There exists such a gong in the British Museum.¹ Benzoni also mentions a drum (*op. cit.*, p. 79) which appears to have been played by the chief or priest only.

¹ Captain Cameron ("Across Africa," 1877, I, plate facing p. 357) describes wooden gongs from west coast of Tanganyika very like those of Hayti.

We have already seen (*Games*) that they possessed timbrels of fish-shells.

Language.

Columbus on his first voyage of discovery found that the natives he took with him from the island *Guanahani* (Watling Island) could converse freely with the natives of Cuba and Hispaniola, and we find later on that natives of Hispaniola could speak the language of, or make themselves understood by, the inhabitants of Jamaica. The Watling Islanders did not quite understand the language spoken at Samaná Bay (Church., II, 596). There were, however, evidently differences in dialect for we are informed by Ramon Pane (p. 631, Vol. II, Churchill Coll., fol. 1704) that the Admiral told him that the language of the province *Madalena Maroris* was different from the rest, and not understood in all parts of the country, and that he was to go to the Cacique *Guarionex* on the west coast "whose language was understood all over the island." Herrera (p. 166, Vol. I, Engl. ed., 1725) confirms this and speaks of the dialect spoken in the province of Guarionex as the "courtly language."¹

With regard to the pronunciation of the language we have only one short statement of Andreas Moralis handed down by Angleria (p. 292), which runs: "All such words as in their tongue are aspirate are pronounced with like breath and spirit as is *f*, saving that herein the nether lip is not moved to the uppermost teeth."

Dr. Brinton appears to be the only authority on the Hispaniola language, and in his excellent paper entitled the "Arawak Language of Guiana," (reprinted Phil., 1871, 18 pp., 4to.), he gives a vocabulary of Haytian words, and a short dissertation on the language.

In all the known words the letter *l* is conspicuous by its absence. We meet with it however in a suffix *el* which appears to correspond to our *-son* (Welsh *ap*, Russian *-vitch*). Pane speaks of a man called *Giaia* (p. 622) and refers to this man's son as *Giaiael*, and again (p. 630) he speaks of a cacique as father to *Guarionel*. *Anacacoa's* sister's name was *Anacaona*.

We may mention here that Mr. Prax ("Bull. de la Soc. de Géog.," Paris, Ser. IX, 1855, p. 202) says "the word *Haiti* which is written *Ahiti* which is composed of three roots, *a*, flower; *hi*, great; *ti*, country. Hence *Ahiti* signifies flower

¹ In Samoa there are three different languages spoken—the first a strictly court language, spoken by the king and highest officials; the second by the lesser nobles and warriors; and the third by the common people (A. St. Johnston, "Camping among Cannibals," Lond., 1833).

of great countries." He gives no proof whatever in support of this explanation.

At a future date we hope to revert to the language of Hispaniola.

Navigation.

Columbus states "they navigate all these seas" (Major, p. 8). "They have in all these islands very many canoes like our row-boats, some larger, some smaller, but most of them larger than a barge of eighteen seats. They are not so wide, because they are made of one single piece of timber, but a barge could not keep up with them in rowing, because they go with incredible speed, and with these canoes they navigate among these islands. . . . I have seen in some of these seventy and eighty men each with his oar" (*ibid.*, pp. 10-11). According to Angleria (*op. cit.* p. 189) "their boats are made only of one tree, made hollow with a certain sharp stone (for they have no iron) and are very long and narrow." At Cuba, a canoe was seen "drawn upon land under a bower . . . it was made of the body of one tree and as big as a twelve-oared barge." Later on a similar canoe was discovered 70 feet long that would carry 50 persons (Church., II, 591). Another canoe is also mentioned with 40 men in it (*ibid.*, 592). Oviedo (*op. cit.*, fol. 89) says the canoes are hollowed out by an axe aided by fire and that the natives burnt and struck alternately. The drawing he gives of one, with its square ends, however, does not convey the idea of swiftness ascribed to them by Columbus. Oviedo states that they are easily upset, but not sinkable, and in this respect they were better than the Spanish boats. From the same drawing it would appear that the paddles much resemble our spades with cross handles and very long blades. Oviedo states that the Caribs had cotton sails (*ibid.*, fol. 89).

The natives of Porto Rico had "boats made of one piece of timber, square at the ends, like trays, deeper than the canoes, the sides raised with canes, daubed over with bitumen, and not flat as the canoes but with a keel." (Herr., I, 340). Benzoni's drawing of a canoe on the coast of Cumana (S. America) is furnished with almost square ends (*op. cit.*, p. 6).¹

Habitations.

According to Oviedo (*op. cit.*, fol. 85) there appears to have been no rule as to where a settlement should be made and their

¹ On the Orinoco, according to H. A. Wickham's "Rough Notes," p. 99, the large canoes with the extremities squared above the water are called "casco," the smaller ones being apparently called "curiara" (p. 59); on the plates facing pp. 160 and 237 the author gives us drawings of the pitpans in use on the Mosquito coast, and which bear a remarkable likeness to the canoe drawn by Oviedo.

villages were consequently found in every situation; their fields were close to their homes, and every village had a space reserved for the game of the *batey*. Dr. Chanca (*op. cit.*, p. 52) speaks of things being "hidden in the grass around their houses," hence we may infer that occasionally at least they were not in the habit of clearing the ground in their immediate neighbourhood. The settlements were of all sizes varying from a village of seven or eight houses (Chanca, p. 51) to a district "so populous that it seemed to be one continued town for a league in length" (Church., II, 618). Dr. Chanca states that the Indians lived in miserable hovels covered with grass and dampness (*op. cit.*, p. 52); but judging by the account and by the two sketches left us by Oviedo, their habitations must have been remarkably good, and were furnished with window-spaces. One kind of house appears to have been hexagonal (or round). Posts were inserted in the ground five to six paces distant, these were joined at the top by wooden braces, and from this point upwards branches were fixed on all round, meeting at the top of a central post, thus giving the dwelling a conical roof. The roofs consisted of straw, leaves of the *Bihao*, cane tops, and palm leaves, but the walls were formed of thick canes set in the ground side by side. The whole was strongly corded together by larger vine ropes (rattans). The houses of the *Caciques* were larger, longer, and furnished with galleries, &c. (Oviedo, fol. 85). The chief's house also had a raised seat inside (Herr., I, pp. 74 and 76). The Cubans appear to have had habitations similar to those in use at Hispaniola; they lived in towns, in houses of timber covered with straw, and made after the manner of pavilions (Church., II, 589); concerning the island of *Borrique* (Porto Rico), "there were many good houses, though built with timber and thatched, and a square in the midst of them, and a way down to the sea, very clean and plain, and the walls of canes interwoven, or wattled,¹ with greens artificially wrought as in Valencia" (Herr., I, 108).

Columbus on his journey to *Cibao* "passed by many Indian towns, the houses whereof were round, thatched, with such a little door [-way] that he who goes in must stoop very low" (Church., II, 612). "They had no doors, but barred access by means of canes or sticks, this was, of course, no defence, but according to their custom no man dared break in at a door he finds so barred" (*ibid.*).

The Indians appear to have had a fair variety of furniture. Angleria (*op. cit.*, p. 192) describing *Anacaona's* treasure-house, says, her treasures consisted of "chairs, stools, settles, dishes,

¹ Cf. Im Thurn, p. 205.

potingers, pots, pans, basins, trays, and such other household stuff and instruments, workmanly made, of a certain black and hard shining wood:" these were manufactured at the island *Guanabba* (now called Gonaïves; it lies some miles off Port-au-Prince). We also hear of a handsome round table, made like a dish, in a *cemi*-house (Church., II, 621). The people, it would seem, did not use stools, but "all sat down on their heels" (Benzoni, p. 79). Columbus we hear on one occasion was seated "on a chair with a low back the Indians used, and they were very neat polished and bright, as if they had been made of jet" (Herr., I, 74). Oviedo (*op. cit.*, fol. 69) also mentions the carved stools. At Cuba, a seat is described which was made of one piece in strange shapes, and almost like some creature that had short legs, and the tail lifted up to lean against, which is as broad as the seat for the convenience of leaning, with a head before, and the eyes and ears of gold (Church., II, 589).¹

Benzoni (p. 79) describing a feast says, "they all sat down on their heels," but Oviedo (fol. 86) describing the game of ball says, "they sat on stone seats."

It was from these people that hammocks were introduced to the Old World. Oviedo (fol. 72) describes them as sometimes made of patchwork (?), and at others of open network. Occasionally they were made so broad that one could lie in them transversely. Both Oviedo and Benzoni draw them as though they had a stay at each end to keep them expanded, but in their description nothing is said of this.

Fire.

Fire was obtained by the simple drill twirled between the hands, with three sticks. Two dry light sticks of brown wood were tied firmly together, and the point of the drill of a particular hard wood was inserted between the two, and then worked (Oviedo, fol. 90).² The Cubans carried firebrands about with them (Church., II, 589).

String.

The posts of their houses were fixed together with rattans (Oviedo, fol. 85), but the ropes with which the Spanish colonists were strangled during Columbus' absence are described as made

¹ The British Museum possesses a small black ebony stool from St. Domingo answering to the above description.

² Judging by an illustration on p. 49 of Benzoni's quoted work the natives of Nicaragua made fire in a similar way. No where else is there any record of a people making fire by means of working into two sticks tied together. Oviedo gives a drawing of how this is done, so that there can be no mistake about it.

of a certain broom (? *Bromelia*) like the esparto (Church., II, 609).¹ Angleria, however, speaks of native hemp for making ropes demanded as a tribute (p. 189).

Weaving.

In translating Benzoni's history, Rear-Admiral Smyth calls attention to the fact that from the use of the word rag (*una pezza*), the arts of weaving and spinning are presupposed (*op. cit.*, pp. 87 and 89). In Benzoni's time, whether these arts were already known to the aborigines or not, it is more than likely that cloth would have been in use. He tells us that the juice of the *yucca* was squeezed out through a rag (*op. cit.*, p. 85), and that their wine was filtered through a cloth (*op. cit.*, p. 87). His drawings of hammocks also make them appear to have been made both of pieces of cloth and of netting. Herrera says the natives gave the Spaniards cotton cloths (*op. cit.*, I, 68), and Columbus says some of the women used a cover of cotton cloth made for that purpose (Major, p. 6). We are also told that at Cuba they none of them made use of the cotton to clothe themselves, but only to make nets for their beds, which they called *hamacas*, and in weaving aprons for women to cover their nakedness (Church., II, 589). When *Guacanagari* pretended to have a wounded leg, that limb was bound up with bandages (Chanca, *op. cit.*, p. 58). According to Ferd. Columbus (Church., II, p. 608), in the houses at Guadaloupe were found "cotton, spun and unspun, and looms to weave" (see Herr., I, 107).

The evidence as to their knowledge of this art is, therefore, somewhat meagre.

Pottery.

Pottery was a well developed art amongst these people, for collectors seem to be able to find fragments marked with the images peculiar to the Indians of this part of the world. Herrera speaks of their "earthenware pitchers, handsomely made and painted" (I, 68). According to Benzoni, the *cacique's* bread was baked in a round pipkin, and they used also large jars or vases and pipkins in the manufacture of their wine (p. 84), and he also refers to their idols being made of clay (p. 78). Angleria (p. 192) mentions special pots for cooking *iguanas*.

Basketwork.

Although none of the historians make any reference to the manufacture of baskets, nor to the material of which they are

¹ The Guiana Indians make string of a *Bromelia*. See Im Thurn, p. 284.

made, we have occasional mention of them proving that basket work was well known to these Indians. On several occasions the Spaniards discovered men's heads sewn up with great care in small baskets in Hispaniola (Chanca, p. 522) and in Cuba also (Church., II, 591). Benzoni in describing a feast speaks of "baskets adorned with roses and various flowers" (p. 80). The Caribs would appear also to have had baskets, as Columbus found them at Guadaloupe full of men's bones (Church., II, 608). These baskets may however have been stolen in their raids.

Calabashes are frequently mentioned.

Stone Implements.

Dr. Chanca found they had "many tools, such as hatchets and axes, made of stone, which are so handsome and well finished that it is wonderful how they contrive to make them without the use of iron" (Major, p. 68).

They used stones to triturate the maize (Benzoni, p. 83): they committed suicide with flint knives (*ibid.*, p. 78) and they cut up the *yucca* roots with "sharp stones that they found on the beach" (*ibid.*, p. 85). Oviedo gives a drawing of an axe (*op. cit.*, fol. 89) in which the stone axe-head is fixed to the haft by insertion into a hole.

Some crudely executed engravings of stone and earthenware figures found in St. Domingo were published on Plate I, Vol. II, of Descourtilz's "*Voyages d'un Naturaliste*," Paris, 1809, and Nicolson in his "*Essai sur l'Histoire Naturelle de St. Domingue*," Paris, 1776, gives on Plate 9, drawings of characteristic images, &c., and on Plate 10, drawings of stone celts well finished, one of which is much like a European axe. The best selection of drawings of stone articles from St. Domingo was published by the late Mr. Edw. T. Stevens in "*Flint Chips*," London, 1870, on pp. 224-235. Among the more interesting may be mentioned "a stone bowl with sculptured ornament upon the outside" and a four-legged "metatl." Mr. Stevens also figured one of those curious stone collars which have been found in St. Domingo, Porto Rico, and St. Thomas, but the uses or objects of which still defy explanation by anthropologists. A paper on Cuban Antiquities, by Andres Poey appeared in the "*Trans. Amer. Ethnol. Soc.*" (Vol. III, Part I, pp. 183-202, New York, 1853), illustrated with a few woodcuts of little stone carvings or images. There appears to be some slight similarity between these images and those of St. Domingo. The author incorporates in his paper a fanciful theory of W. Walton's ("*Present State of the Spanish Colonies*," London, 1810, Vol. I, pp. 167-171) on the connection between the Hispaniolas and the followers of Brahma which, it is

needless to add, will not stand investigation. Schomburgk ("Jour. Ethnol. Soc.," Lond., iii, 1854, pp. 114-122) says the carved stones "are only found where there is sure evidence that the Caribs inhabited or visited the place," but he, on his part, gives no evidence in support of this statement.

Metallurgy.

Gold there appears to have been plenty, apparently obtained only at the surface, as Chanca, already quoted, records they had not the "means of digging more than a hand's depth," but Angleria, (*op. cit.*, p. 188) says that when the Spaniards arrived at the gold mines of *Cipanga*, "they found certain deep pits which had been digged in old time," and which Columbus thought must be the mines of Solomon.

Benzoni refers to idols made of gold and silver (p. 78): Oviedo (fol. 69) of gold only. We have already described (*Personal Ornaments*) how the gold was beaten into shape. There is no record of its having been smelted.

There exist copper mines in Hispaniola, but we find no mention that the natives made any use of this metal, although at Martinique Columbus describes Carib women who "arm and cover themselves with plates of copper, of which metal they have a great quantity" (Major, pp. 14-15), but this appears to be hearsay.

At Guadaloupe some of the men on the second voyage declared they had found an iron pan, but Ferd. Columbus says this must be a mistake, as "there never was anything of iron found among those people" (Church., II, 607). Later on the sailors affirm they met with iron hatchets on the same island (*ibid.*, 634). These implements may have been stolen, for Columbus (Major, p. 6), Chanca (*ibid.*, p. 68), and Angleria (*op. cit.*, p. 169) all unite in stating that the Indians had no iron.

The Indians valued brass more than gold and highly valued tin (Herr., I, 141).

Topography.

According to Columbus the Indians were well acquainted with their surrounding islands (Major, p. 10). Angleria, Herrera, Muñoz, and others describe the position of the towns, &c., which we need not discuss here.

Swimming.

Moralis tells us "they are the most expert fishers by reason that they are accustomed daily to plunge themselves in the

rivers, so that in a manner they live no less in the water than on the land" (p. 290). On one occasion, at Guadaloupe, when it was too rough to land the boats, Columbus sent the Hispaniola women ashore by swimming (Church., II, 634). On another occasion some women escaped from the Spaniards by swimming considerably more than half a league (Angl., p. 175). Oviêdo also says they were splendid swimmers (fol. 89).

NOVEMBER 23rd, 1886.

FRANCIS GALTON, ESQ., M.A., F.R.S., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The election of C. W. ROSSETT, Esq., as a corresponding member was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the DEPARTMENT OF MINES, Sydney, N.S.W.—Annual Report for the year 1885.

From the PEABODY ACADEMY OF SCIENCE.—Ancient and Modern Methods of Arrow-Release. By Edward S. Morse.

From the AUTHOR.—Can Europeans become Acclimatised in Tropical Africa? By R. W. Felkin, M.D.

— A Contribution to the Determination of Sex. By R. W. Felkin, M.D.

— The Scientific prevention of Consumption. By G. W. Hambleton.

From the ACADEMY.—Kongl. Vitterhets Historie och Antiquitets Akademiens Manadsblad, 1885, Nos. 157–159.

From the ASSOCIATION.—Proceedings of the Geologists' Association, Vol. ix, No. 6.

From the INSTITUTION.—Journal of the Royal United Service Institution. No. cxxxvi.

From the SOCIETY.—Journal of the Society of Arts. Nos. 1773, 1774.

— Boletim da Sociedade de Geographia de Lisboa, 1886, Nos. 3, 4.

From the EDITOR.—Nature. Nos. 889–890.

— Science. No. 196.

— The Photographic Times. No. 268.

— L'Homme, 1886, No. 16.

— Bullettino di Paletnologia Italiana, 1886, Nos. 9, 10.

The following paper was read, in the absence of the author, by Professor A. H. Keane :—

On the TRIBES of the EASTERN SOUDAN.

By DONALD A. CAMERON, Esq., H.B.M. Consul for the Eastern Soudan.

THE Arabs of Suakin and of its neighbourhood, for about 100 miles in a semi-circle, may, for convenience, be divided into the following tribes :—

1. Natives of Suakin, *i.e.*, Suakinese.
2. Amárrars.
3. Hadéndoas.
4. Ashrafs.
5. Artégas.
6. Bishareen.
7. Beni Amers.

1. The population of *Suakin* is a mixed one, and, exclusive of the Egyptian garrison, numbers about 5,000. Deducting from this a score of English and about 100 Greeks and Levantines, together with Turkish and Egyptian officials, Jeddah merchants and artisans, Somalis, Arabs of Aden, Abyssinians, and natives of India, there remain about 4,000 Suakinese and Soudanese negroes who now represent the fixed population of the town. Owing to the constant intermarriage between the different black peoples here, certain further deductions must be made, and we have left perhaps 3,000 genuine Suakinese whose native language is *Tobedawiet*, and who are identical in race and in language with the friendly or hostile tribes of Arabs outside the town, such as the Amárrars, Artégas, &c.

Later on in treating of each of these tribes it will be seen that they claim by tradition to have different origins. Whatever truth there may be in such traditions, for all practical purposes it may be confidently affirmed at starting that all the natives of the north-eastern Soudan, inside and outside of the town of Suakin, are kindred and speak one common language, *Tobedawiet*, in distinction from Arabic, of which they are more or less ignorant.

The Arabic name for the people of the desert is *Orban* (عربان), by which one means Bedouins, mountaineers, nomads, camel-men, and shepherds, &c. The Suakinese of the town are often called Hadáreb. Now there is a province in the south of Arabia called *Hadramaut* (حضرموت), whose inhabitants are

called *Hadramy*, in the plural *Hadárima* (حضرمي، حضارمة). These Hadramies abound at Hoveida and other parts of El-Yemen. In fact Hadramy is a generic name at Suakin for people from the south of Arabia, and not from Jeddah and the Hejaz; and it is most natural that from the earliest times adventurers from Hadramaut may have come over and settled at Suakin. Upon this is based the tradition that Suakin is a Hadramy colony, and that Hadáreb is merely another form of Hadárima—*m* and *b* being interchangeable. Indeed, Othman Sheikh, who claims descent from the aborigines of Suakin, tells me that the Suakinese or Hadáreb are undoubtedly Hadramies from South Arabia.

Mr. G. A. Hoskins, who travelled in Ethiopia in 1833, and soon after published a work on the ruins of Meroe, near Berber, states that when at Dongola, he was told by Sheikh Mukhtar, a most intelligent Kadi, that in the time of the fourth Khaleefa, namely, Ali (in the seventh century A.D.), there was an invasion by the great tribe of the Ababja from the Yemen, who "finding the country inhabited by infidels, drove out some but forced the greater number to turn Moslems, and that thus the former inhabitants became blended with the Arabs and have not been distinguished for ages. This is a curious and highly interesting tradition proving historically almost what might naturally be supposed."

On the whole I think there must be some truth in this Dongolese tradition as narrated by Mr. Hoskins, and I would here draw attention to the similarity of the two words Ababja and Beja.

Ababja can hardly be different from the modern word *Ababdeh*, the name of a powerful tribe which stretches south from Assouan, having the Bishareen to the south and the Amárrars to the east.

Beja is a vague word applied to all Tobedawiet-speaking Arabs, and the origin of the word deserves serious discussion.

In another part of his work Mr. Hoskins says that it is probable that during the period of its magnificence the Empire of Meroe held the Yemen tributary, and that on its decay it was invaded by the Yemenese (Hadramies), who swarmed across into Nubia or Ethiopia. If this view is accepted there can be no doubt that these Yemenese landed at or near Suakin, between Rowaya and Agig, and that most of them hurried inland to the Nile, a certain small portion remaining on the coast. Thus what Othman Sheikh tells me at Suakin, in May, 1886, is confirmed by what I have just read by chance in Mr. Hoskin's book of 1833-4.

Burckhardt, who was at Suakin in 1814, gives a very full and valuable account of this town, and accepts the native statement that Suakin is more or less a colony of Hadramaut.

My own opinions are as follows:—

1. There may have been at least one invasion of the Eastern Soudan from Arabia.

2. That such of the invaders as could not find room on the coast had to hurry inland till they struck the Nile, and that the survivors were easily absorbed by the aborigines, adopting the aborigines' language and having little or no effect on the aboriginal race.

3. That Suakin being on the coast may have retained a large proportion of Hadramies, and so have come to be called Hadramy.

4. That the present Beja or Tobedawiet-speaking people of the Eastern Soudan are the aborigines, who gradually adopted Islam through contact with the coast or with Egypt, or with minor Moslem invasions in the seventh and following centuries.

5. That the Eastern Soudanese are quite unlike the Bedouin Arabs of the north, such as are met with in Arabia, Syria, Mount Sinai, and the Delta; and that they may be fairly assumed to be the aborigines of the country.

The following are extracts from a letter from Mason Bey, of the Egyptian Service, who has travelled a great deal in the Soudan. He says that the aborigines question is very far from settled. For his own part he believes that the Bishareens, Hadéndoas, Halengas, and Beni Amers are an autochthonous race, and that they have held their own in spite of all invasions. As for the theory that the aborigines were killed off by the invaders, that will not stand before recent evidence. Moreover, an invader must have been pressed to reach the Nile, and could do no more than hurry through the country. Occupation by any sedentary race is out of the question. The late Ali Bey, Bakheet of Kassala, assured him that the Beni Amers, Hadéndoas, Bishareen, and Halengas called themselves the "*Rotn*," and that *Rotn* is the name of their country and people. These people have no affinity with the Arabs. Linant gives an account of them in his work on the "*Etbai*." According to Lepsius the Suakin people are Arabs having no affinity with the neighbouring tribes. Mason Bey very properly doubts the affinity between the Hadéndoas and Abyssinians. He adds that most of the ethnological difficulties arise from a preconceived determination to divide the human race into certain hard and fast groups, located within equally hard and fast lines.

Mason Bey sent me the following letter from M. Bonola, the Secretary of the Khedivial Geographical Society of Cairo:—

"My dear Bey,

"This is what I have found about the Beja and Bishareens in the 'Nouvel Dictionnaire de Géographie,' de Vivien de St. Martin, 1884.

"*Beja* or *Bishareen*.—An aboriginal people of Nubia. This name is ancient, and some think they can recognise it in the hieroglyphic inscriptions under the name of *Bouka*, which is like the *Bouga* of the Ethiopian inscriptions, and the Greek inscriptions of Axum.

"Latin authors speak of them as *Blemmyes*.

"On their arrival in Egypt, the Arabs came in contact with the Beja, and good information can be obtained about them from the old Moslem authors. The best notice is that by Makrizi in his 'History of Egypt,' also in the 'Istakiri,' translated into German by Mordtmann ('Das Buch der Länder,' Hamburg, 1845), and in Masoodi.

"Makrizi says that the Beja are of Berber origin. Soon after the arrival of the Arabs in Egypt the Moslems invaded the emerald mines, and intermarried with the Beja, so that a large number of the tribe, called Hadáreb, embraced Islam. This Hadáreb tribe, which is the *élite* of the nation, inhabits the side which is towards Saeed.

"After this *resumé* of Makrizi, M. Vivien goes on to uphold his thesis that the Beja are of Berber origin, and he analyses M. Linant's book on the 'Etbai,' which gives a very detailed description of the manners of this people.

"The language *Bejawi* or *Bedawi* (which must not be confounded with Bedouin) is altogether an original idiom, hitherto very imperfectly known, and it is of very great ethnological importance to determine the relation between the Agão and the other aboriginal dialects of Abyssinia, and the Somali, Galla, Ababdeh, Coptic, and the Berber dialects of the Etbai district.

"The tribes of the Beja family are numerous, such as the Hadéndo, Halenga, Shinterab, Merefab, &c."

The above is M. Bonola's letter, and I agree with Mason Bey that it only adds to the general confusion.

In the Bible (Chronicles II, chapter xii, verses 2 and 3) it is said that Shishak, King of Egypt, invaded Jerusalem with an army of Ethiopians, and Lubims, and Sukkiims. Sukkiims may mean the people of Suakin.

Suakin is written *Sawákin* in Arabic (سواكن). The natives call it "*Soke*," in their Tobedawiet language.

The houses at Suakin are all built of coral rag, which is called *Domar*. This is torn up by crowbars from the reefs in summer when the water is low. The natives live in large huts of matting stretched on branches. These huts are called "*Bidaigowab*."

The Suakinese are undoubtedly a handsome race. They are rather below our average height, although their slender figures, covered by the loose white *tōb*, or native toga, and their upstanding hair, make them look taller than they are.

Out on the plains or in the hills they have great powers of endurance in running and climbing, and are as active and lithe as greyhounds. But in the town they are lazy and good for nothing; and even when willing to work make but feeble coolies and coalheavers. Their food is almost entirely vegetable, varied with fish and now and then a little meat.

Within their own narrow waters the Suakinese are very expert fishermen and sailors. Their craft consist of canoes and dhows. The canoe (*Khoori*) is always a "dug-out" of teakwood brought from the East Indies. Their dhows are of the usual type throughout the east, carvel-built and with lateen-sails.

I took great interest in scanning the features of the Suakinese. It was easy to detect the presence of negro blood by the thickness of the nose and lips, &c., but after making all deductions for intermarriage, I made out two rather distinct types, that of the sheikhs and that of the lower classes.

Some of the sheikhs' faces were almost as perfect and refined as that of any Caucasian. The nose was fine and delicate, the brows arched, the lips and chin well cut, and the jaw not too heavy. The hands and feet were small and shapely. The hair was long and wiry, but not crisp like a negro's. It was divided into three parts—a thick pad on the crown, and thick festoons of hair on the side. Some shave their heads, and wear turbans.

The complexion was a dark brown, but not black; on the other hand it was never fair like that of many Arabian Bedouins.

The faces of the lower orders of pure Suakinese are decidedly coarser as a rule. But here again there is a marked difference between tribes. The Amárrars, and especially the Ashrafs, claim superiority of race, and scorn the savage Artégas and Hadéndoas. As these two latter tribes were hostile and absent from Suakin I have had no opportunity of inquiring into this interesting detail.

A great friend of mine, young Sheikh Seyyid Yaseen, an Ashraf or aristocrat of the Northern Amárrars, assures me that it is very easy to distinguish an Amárrar from a Hadéndoas, or both from an Artéga, Bishareen, or Beni Amer; and that every tribe has its peculiar dialect and idioms. A Hadéndoas from near Kassala could never be mistaken for an Amárrar of Suakin or a Bishareen from Berber; the connecting links between these extreme tribes being the minor nomad families who inter-

marry or change their allegiance from time to time. There can be no doubt that the present revolution in the Eastern Soudan will also have a great effect on the tribes. It marks a great epoch in their national history, and every piece of really accurate information which can be gathered now concerning the rebellion will be of value by-and-by from an ethnological point of view. Some of the minor hostile tribes have been annihilated, or are represented only by women and a few infant males. Whole mountain districts have been depopulated. The authority of great sheikhs has been upset, and the future is in the hands of a few less powerful sheikhs and tribes who have kept aloof from the rebellion and fighting, and who are, in consequence, relatively much stronger than before.

2. Outside Suakin we meet with two great tribes, the *Amàrrars* and the *Hadéndoas*. The Suakin-Berber road forms a pretty correct boundary between them. The *Amàrrars* stretch along a base line from Suakin, Handoub, and Ariab, northwards past Rowaya and Elba towards Kosair. They are Arabs of the mountains and of the coast. They are not Nile Arabs, for between them and the Nile are the Ababdehs and Bishareen. Their country is called the "*Etbai*." The headquarters of the tribe is in the Ariab district, and their sheikh of sheikhs, who has been recently murdered by Osman Digna, was Hamed Mahmoud, son of Hamed Hasai, of the Ajim or noblest stock. The *Amàrrars* may be classified into four great families—

- i. Weled Gwilei,
- ii. Weled Aliab,
- iii. Weled Kurbab-Wagadab,
- iv. *Amàrrars* proper of the Ariab district,

making in all a total of about 50,000 fighting men.

The *Amàrrars* claim to be of Koreish descent. They assert that Seif Ullah Khàlid ibn Weleed invaded and conquered the Eastern Soudan in the reign of the Khaleefa Osman, and that they and their kindred tribes of the Comeelab, Bishareen, Belaweeb of Suakin, and Mergomab of the Atbara, are the descendants of the invading Arab army. The grain of truth in this tradition is that small bands of Koreish Arabs may have come and won over certain sheikhs and tribes to Islam, and that as the new faith spread over the country during the last 1,000 years the people have been at pains to make themselves out to be of Arabian descent.

3. The *Hadéndoas* have their headquarters at Filik, near Kassala, and extend from the Abyssinian frontier northward through the Gash, Wadi Langab, Wadi Oseer, and Khor Baraka, past Erkowit and Tokar to Kokreb, and Sinkat close to Suakin.

The Shukuriehs are to the south and west of them; the Beni Amers to the east; the Bishareens and Amárrars to the north; and their only access to the sea is in the neighbourhood of Suakin. The majority of them are much nearer Kassala than Suakin, and it is incorrect to speak of the Suakin Arabs in a general sort of way as being Hadéndoas.

Digna himself is a Hadéndoa, and for the last three years he has succeeded in collecting at Tamai a large number of the Northern Hadéndoas, Artégas, and some Amárrars. Thus the word Hadéndoa is now almost synonymous for the rebels. The natives whom I have consulted all insist that the Hadéndoas are not of Arabian origin, and that they are an early emigration from the centre of Africa, west of the Nile. The Amárrars look upon them as a wild inferior race, who somehow have learnt the Tobedawiet language, but who are quite distinct from the Amárrars, Ashrafs, Beni Amers, and Bishareen. They say that the Hadéndoas freely intermarry with other tribes, that their sheikhs have not much influence over them, and that they easily shift their allegiance and follow any leader of their fancy like bands of brigands rather than tribes under a sheikhdom or patriarchal government.

The head sheikh of sheikhs of all the Hadéndoas is Musa, who lives at Filik, in the Kassala or Taka province.

The Hadéndoas outside Suakin may for convenience be divided into two great tribes, (1) *Hamdabs* and the (2) *Erkowais*.

In addition to these, there are of course all the numerous tribes and sub-tribes under the great Sheikh Musa, at Filik, to the south.

But at Suakin I am unable to obtain any accurate information about them, and I now speak only of the Northern Hadéndoas immediately under Digna's influence. This confederation in 1884-5 must have numbered at least 15,000 desperate fighting men.

The Comeelabs are sometimes spoken of as Amárrars and sometimes as Hadéndoas. The Amárrars claim them as kindred but many of their sub-tribes joined the Hadéndoas under Digna.

4. The *Ashraf*, *Shurefa*, or *Shereefs* (اشرف, شرفا, شريف) are a small tribe who live for the most part near Tokar, in the Gash and in Khor Baraka. A certain portion have also settled among the Amárrars to the north. The number of grown males among all the Ashraf probably does not exceed 2,000. They call themselves Beni Háshim, and claim descent from the Prophet. Throughout the Mahdi-Digna revolution they have remained loyal to the Egyptian Government and their sheikhs are now taking an active part with the Amárrars in dispersing the rebels.

Seyyid Yaseen, an Ashraf-Amárrar Sheikh, tells me that centuries ago their ancestors were rulers of Medina, but that in the sixteenth century they were overthrown by the family of Abdul-Mutaleb. The Mecca Sheikhs then invited them to come and settle in that town, but Mohammed el Wali, the head of the family, refused, and crossed over to Suakin about the year 1550 A.D. He died and was buried at Suakin, leaving three sons, whose posterity are now to be found near Tokar, in Suakin, and among the Northern Amárrars.

Their greatest sheikh is Shereef Mohammed Abu Fatima, who lives at Dagga, in Khor Baraka.

I consider that the future of the Eastern Soudan is in the hands of the Amárrar-Ashraf tribes, and that with patience, conciliation, and firmness there is every hope of establishing a sound native government under the headship of their sheikhs.

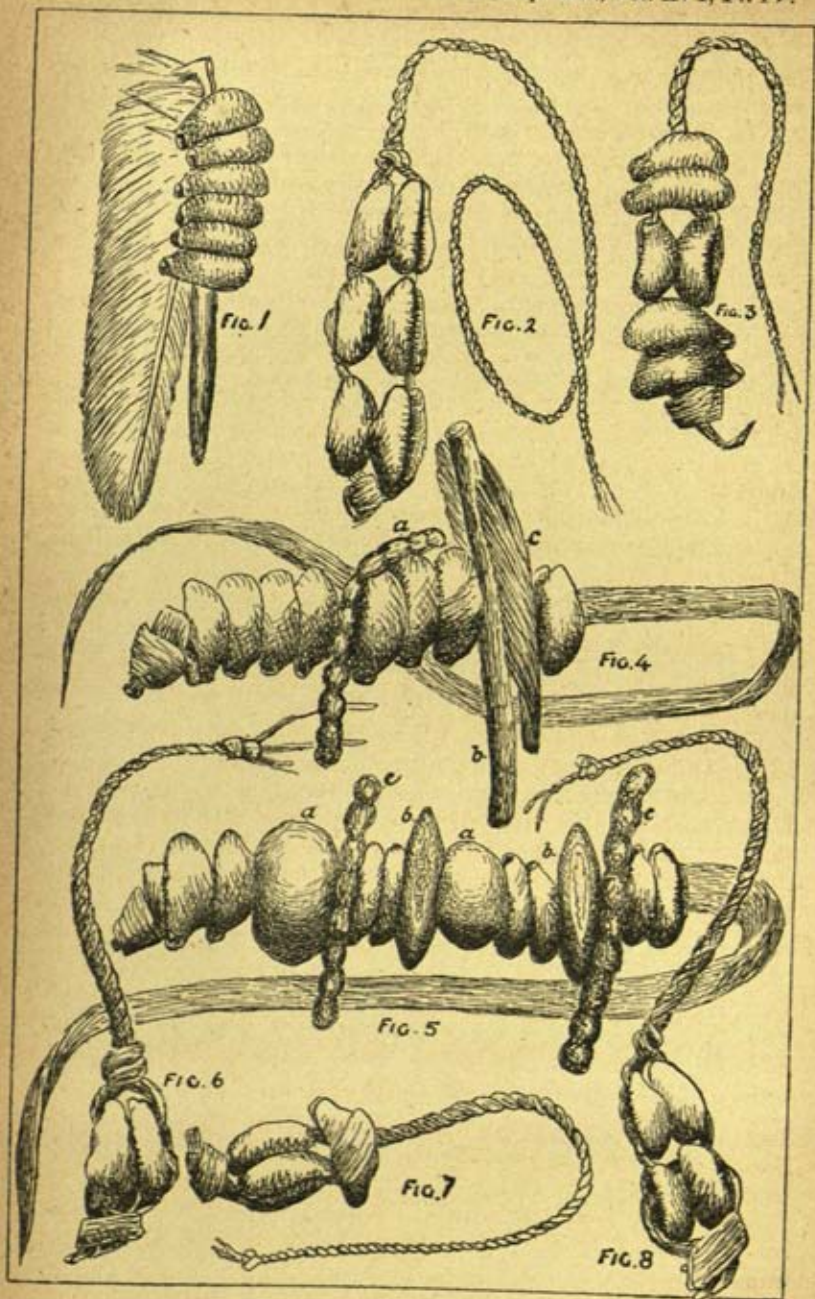
5. The *Artégas* are said to be the descendants of a sheikh of that name, who came from Hadramaut in pre-Islamic times, and married one of the daughters of Iblis, and settled near Tokar. The *Artégas* now assert that their name means "patrician" (ǝmed. عمد), and indeed they may be looked upon as the most ancient stock of this district. I have met with no *Artégas*, as they are all rebels, but I am assured that they are an inferior race like the lowest types in Suakin. At present the tribe numbers about 5,000 men near Tokar. Before the revolt, large numbers were to be found in this town. One family still remains, the Divan Bekabs, but they are few and quite insignificant. Similarly, Mahmood Resheed ibn et Taha, of Suakin, claims to be of the original stock of *Artéga* and the daughter of Iblis.

It is worth while going to Tokar, and making a thorough inquiry into the traditions of this tribe; and I believe that much valuable information from an ethnological point of view can be obtained from a stay in that district.

Tokar, indeed, and not Suakin, is the key to the north-east Soudan. Suakin is a chance settlement, and has a score of rival inlets north and south; but Tokar, from its position, is unique. It is at Tokar, therefore, that the questions of the races and languages of the Tobedawiet Arabs can be best studied. One could learn more in a month there, than in a year at Suakin.

6. The *Bishareen* occupy the western half of the Berber road, and lie beyond the Suakin province. The Amárrars claim them as kindred of Arabian, Koreish, or Kwahili origin. Certain tribes like the Bishara and Bishariabs are indeed classed as Amárrars. They speak Arabic and Tobedawiet.

7. The *Beni Amers* (بنى عامر) occupy a triangle of territory



WEST AFRICAN SYMBOLIC MESSAGES.

of which Agig is the apex; the sea coast to Massowa the eastern side, the Khor Baraka to Kassala the western side, and the Abyssinian frontier the base.

Their language is Tigré and not Tobedawiet, and like the Bishareen, they lie beyond the Suakin province.

Of the foregoing tribes of Suakinese,

Amárrars,
Hadéndoas,
Ashrafs,
Artégas, and
Bishareens,

it will be seen that the first thing that connects them more or less is their common speech—Tobedawiet.

Almkwist has published a very full grammar of this language under the title of "*Bischari Sprache*." Munzinger, in his "*East African Studies*," gives an excellent vocabulary of Tobedawiet as spoken in the south among the Hadéndoas and some of the Beni Amers.

In the next place (although most of the Beni Amer speak Tigré, which is an Abyssinian dialect, and very few speak Tobedawiet), yet the Amárrars claim kindred with them. On the other hand they scout any idea of kinship with the Tobedawiet-speaking Hadéndoas. I do not understand this.

The course of study which I have laid down for myself in my leisure this winter and spring at Suakin is first of all to try and master the Suakin language as a basis for ethnological research. I may then be able gradually to collect fresh materials in the shape of oral traditions, folk-lore, &c., which may be of use to this Institute. The present essay is merely a preliminary sketch.

EXHIBITION of WEST AFRICAN SYMBOLIC MESSAGES.

By G. W. BLOXAM, M.A., F.I.S., Assistant Secretary.

[WITH PLATE IV.]

THE ASSISTANT SECRETARY said that Mr. R. N. Cust had kindly presented to the Institute eight specimens of Aroko, sent to him by Mr. J. A. Otonba Payne, Registrar of the Supreme Court at Lagos. These Aroko, or symbolic letters, were such as are used by the tribe of Jèbu in West Africa, to which tribe Mr. Payne himself belongs.

No. 1 (Fig. 1, Plate IV) is a message from a native prince of Jèbu Ode to his brother residing abroad. It consists of six

cowries, all turned in the same direction; the quill of a feather is passed through them from front to back, and the shaft turned back towards the end of the quill, and fixed to the side of the cowries.

Six in the Jèbu language is *E-fà*, which is derived from the verb *fà*, to draw; Africans are in the habit of cleansing their ears with a feather, and look upon it as the only instrument by which this can be effectually done; the whole message, therefore, is as follows.

Efà yi ni mo fi fà o mọra, ki 'wọ na sì fà mọ mi girigiri.

"By these six cowries I do draw you to myself, and you should also draw closely to me."

Iyẹ yi ni mo fi nreti, ni kankanṣi ni ki nri o.

"As by this feather only I can reach to your ears, so I am expecting you to come to me, or hoping to see you immediately."

No. 2 (Fig. 2, Plate IV) is from a native general of the Jèbu force to a native prince abroad. This also consists of six cowries, but they are arranged two and two, face to face, on a long string; the pairs of cowries being set face to face indicate friendly feeling and good fellowship; the number six expresses a desire to draw close to the person to whom the message is sent; while the *long* string indicates considerable distance, or a long road. This is the message:

Bì ọnà to wà lārin wa tilẹ, jìn pupọ-pupọ, sibẹsibẹ mo fà o mọra, mo sì doju kọ o. Bẹ ni mo fẹ ki o doju kọ mi, ko sì fà mọ mi.

"Although the road between us both may be very long, yet I draw you to myself, and set my face towards you. So I desire you to set your face towards me, and draw to me."

The third letter (Fig. 3, Plate IV) is from a native prince of Jèbu Ode to one of his cousins abroad. The message consists of six cowries as before, but the arrangement is again different; in this message two cowries are placed nearest the knot facing in the same direction, towards the opposite end of the string; then come two face to face; and, lastly, two more facing in the same direction towards the end of the string. The two pairs of cowries facing in the same direction indicate numerous people before and behind the two blood relations signified by the cowries in the centre, which face one another, and around which, it will be observed, the string is tightly drawn. The message is:

Lārin ọpọlọpọ enia, niwá-lẹhìn, a kò lè sàl mò ará ẹni; bí o ti mò mi, tí mo sì mò ọ, jẹ ka doju kọ 'ra wá, ka gb'ara wá mu, ka ma še dehìn kọ 'ra.

"In the midst of numerous people, before and behind, relations are sure to recognise and know each other; as we have known ourselves to be *one*, let us set our face to each other, and embrace ourselves together, never to turn against each other."

No. 4 (Fig. 4, Plate IV) is from His Majesty Awnjalẹ, the King of Jẹbu, to his nephew abroad, and here we find other substances besides cowries included in the Aroko. Taking the various articles in order as before, commencing from the knot, we observe four cowries facing in the same direction, with their backs to the knot, this signifies agreement; next a piece of spice (*a*) which produces when burnt a sweet odour, and is never unpleasant; then come three cowries facing in the same direction; then a piece of mat (*b*); then a piece of a feather (*c*); and, lastly, a single cowrie turned in the same direction as all the others. The interpretation is:

Ọrọ temi tirẹ mejì jọra wọn. Iwà rẹ wù mi, osì jọ temi.

"Your words agree with mine very much. Your ways are pleasing to me, and I like them."

Maru:—Ẹrùn kì iru Ọlọrun.

"Deceive me not:—Because the Spice would yield nothing else but a sweet and genuine odour unto God."

Nka şeru si ọ lailai.

"I shall never deal doubly with you all my life long."

Bì ọrọ rẹ tí rẹn mi to, opin ni.

"The weight of your words to me is beyond all description."

Nitori lori ẹni kanna la njoko, t'a sì nsùn—lo jẹ ki nranşẹ si ọ.

"As it is on the same family mat we have been sitting and lying down together—I send to you."

Njẹ eti rẹ ni ngo mǎ re.

"I am therefore anxiously waiting and hoping to hear from you."

Fig. 5, Plate IV represents a message of peace and good news from His Majesty the King of Jẹbu to His Majesty the King of Lagos, after his restoration to the throne on the 28th of December, 1851. It appears even more complicated, but the interpretation is simple enough. First we find eight cowries arranged in pairs, and signifying the people in the four corners of the world, and it will be observed, that while three of the pairs are arranged with their faces upwards, the fourth and uppermost, *i.e.*, the pair in the most important position, are facing one another, thus

signifying that the correspondents, or the people of Jẹbu and Lagos are animated by friendly feelings towards each other; so too, there are two each of all the other objects, meaning "you and I"—"we two." The two large seeds, or warres (*a, a*) express a wish that "you and I" should play together as intimate friends do, at the game of "warre," in which these seeds are used, and which is the common game of the country, holding very much the same position as chess or draughts with us; the two flat seeds (*b, b*) are seeds of a sweet fruit called "*osan*," the name of which is derived from the verb "*san*," to please; they, therefore, indicate a desire on the part of the sender of the message to please and to be pleased; lastly, the two pieces of spice (*c, c*) signify mutual trust. The following is the full meaning of the hieroglyphic.

Ninu gbogbo enia ti o kún igun merẹrin aiye, ara Eko ati Ijẹbu lo sun mọra ju.

"Of all the people by which the four corners of the world are inhabited, the Lagos and Jẹbu people are the nearest."

Bi o ti jẹ pe ere li ã fi ayò ẹ, bẹ lo yẹ ki Jẹbu ati ara Eko mā ẹrẹ pọ.

"As 'warre' is the common play of the country, so the Jẹbus and Lagos should always play, and be friendly with each other."

Sisàn li ọsàn isan ni; ki o ma ẹai sà ọ bi o ti sà mi.

"Mutual pleasantness is my desire; as it is pleasant with me, so may it be pleasant with you."

Maru :—Ẹrùn kì iru Ọlọrun.

"Deceive me not :—Because the Spice would yield nothing else but a sweet and genuine odour unto God. I shall never deal doubly with you."

As a general rule odd numbers are of evil import, while even numbers express good will; thus a single cowrie may be sent as an unfavourable answer to a request or message, meaning :

Orọ na kan leti ẹni, kò ẹ ẹ.

"The matter is unpleasant to our hearing—not easy to be done."

Whereas it has been seen that two cowries facing one other signify two blood relations; two cowries, however, back to back (Fig. 6, Plate IV) may be sent as a message of reproof for non-payment of debt, thus :

O kọ ẹhìn sì mi patapata, lẹhìn ti a ti ni ọrọ pọ nipa gbèsè ti o jẹ mi, emi na yio sì kẹhìn sì ọ.

"You have given me the back altogether, after we have come to an arrangement about the debt you have owed me, I also will turn my back against you."

Fig. 7, Plate IV, consisting of two cowries face to face followed by one above, facing upwards, is a message from a creditor to a bad debtor, and means :

O jẹ mi ni gbèsè tan, o sì ta mi nù ; emi na yio sì ta ọ nù, nitori emi kò mò pe iwọ lè ẹ iru eyi si mi.

"After you have owed me a debt, you kicked against me ; I also will throw you off, because I did not know that you could have treated me thus."

No. 8 (Fig. 8, Plate IV), which consists of four cowries in pairs, face to face, is a message of goodwill from a brother to another brother abroad, asking for a personal interview :

Orò ayò ati ẹrin ni. Ara wa le. Mo fẹ ọ ri, ki oju ti emi ati tirẹ ko ẹ mẹrin.

"It is a message of joy and gladness. We are all quite well in the family. I would like to see you, so that the *four eyes*—yours and mine—may see each other."

Explanation of Plate IV.

Figs. 1 to 8.—Representations of the symbolic messages described in the foregoing paper. The originals were presented by Mr. Payne to Mr. R. N. Cust, by whom they were transferred to the Anthropological Institute: they are now in the museum at Oxford under the care of Dr. E. B. Tylor.

DISCUSSION.

DR. TYLOR called attention to the desirability of systematically collecting examples of symbolic messages among all peoples, as worked on their two main principles, viz., *direct signification* or allusion, as when a bit of charcoal means death, and *punning signification*, by a play upon words, as in many of the other examples brought forward. The symbol-message survived in advanced civilisation, typical instances being the classical message of the Scythians to Darius consisting of a bird, a mouse, a frog, and five arrows (Herodot., IV, 131), and the episode of the woodcock's feather in Scott's "Woodstock."

SIR JAMES MARSHALL and CAPTAIN MALONEY also joined in the discussion.

The following paper was then read by the Secretary :

On the RACES inhabiting SIERRA LEONE.

By T. R. GRIFFITH, Esq., Colonial Secretary at Sierra Leone.

I CANNOT imagine any place in Africa where there is such a field for the Anthropologist who desires to study the varieties of African men and races as Sierra Leone. It is peculiarly situated in this respect, the colony having been the place to which, for many years, were carried all liberated Africans rescued by British men-of-war.

Hence the settled population in the present generation includes the children of an infinite variety of African races drawn from a large portion of that great continent, wherever the slave traders of Europe and America once carried on their operations. Under British rule, these people are now gradually settling down into one nation and the English language, or rather a peculiar dialect of it, is commonly spoken, but the process of amalgamation of tribes and races is very gradual, and one unfortunate characteristic of the Sierra Leone community is the mutually exclusive tendencies and jealousies of families and tribes according to the races from which their liberated forefathers had sprung, although not breaking out into tribal riots as they once did. This is still very observable with juries in the law courts.

There is also, I may say, not yet any peculiar physical characteristics which may be said to predominate, so that you could distinguish a native negro of Sierra Leone as such from the natives of the tribe of his particular forefathers.

In drawing up in my official capacity the instructions for taking the census of the colony in 1881, it was necessary, as far as possible, to distinguish between the various tribes within the colony, but so numerous were those from whom the descendants of liberated Africans were drawn, that it had to be given up in their case, and also in that of the natives of the colony descended from independent peoples, who, attracted by the security of British Government, had settled among them. These classes of the people together numbered about 38,800, out of a total population of 60,500. The remainder were classed as Mandingoes, Timmanees, Iloffs, Baggas, Mendis, Sherbros, Gallinas, Limbas, Sosoos, Foulahs, Loccos, Serrakulies, Bulloms, Kroomen, West Indian negroes, and a population of about 750 souls of whom no account of their race could be obtained. These few particulars, which I am obliged to make as short as possible, may serve to give an idea of the very wide field for anthropological study, which is afforded by the colony of Sierra Leone. Every type of West African feature, every

dialect of its numerous tongues, every variety of its costume every peculiarity of its superstition and creed—from the belief in Greegrees and fetish worship to the Monotheism of Mohammed—may be met with either among the inhabitants or irregular but frequent visitors from other parts of Africa.

To enter upon any large proportion of the innumerable interesting topics thus afforded would require more time and space than could be devoted to them within the limits of this paper, and I therefore propose to confine what I have to say to a few of the more characteristic and important.

Mixed up with the general population of liberated descent are two peculiar tribes or families of somewhat different origin known as the Nova Scotian settlers and the Maroons. The former are descended from American negroes who had fought under the English flag in the American war, at the close of which they were placed by the British Government for their safety in Nova Scotia, but suffering from the rigorous climate, some 1,800 were in 1792 transferred to the settlement of Sierra Leone. Having been free blacks and proprietors in the Southern States trained under American slavery, they had no taste for labour, and considered agriculture only fit for slaves. This led to many troubles. Their numbers are decreasing. The Maroons were natives of Jamaica, who claimed their freedom when Great Britain took that island from the Spaniards. They had lived in the mountains of Jamaica, and were not peaceable characters. Some 550 were brought to the settlement in 1800. They became useful and industrious men, notwithstanding their dislike for agriculture. They inhabit a quarter of Freetown named Maroon town. Rankin, who visited Sierra Leone in 1834, states they were originally principally of the Coromantin natives, and were celebrated for fine muscular form, but their old nationality was destroyed, and a new race generated by a mixture of Spanish, and most probably Carib blood with the negro.

Among the permanent residents from other parts of Africa are the Akus, the Eboes, and the Kroomen.

The Akus form the most numerous and important of the distinctive races, having been originally liberated, living in Sierra Leone.

Their name *Aku*, according to Dr. Clarke, signifies "How d'ye do?" They belong to a race of the interior, known as the Yorubas, or Yarribeans, located on the Niger to the back of the Eboe and Benin countries, where they form a large nation, which has the British settlement of Lagos for its neighbour. They have less of the characteristic features of the typical negro, their lips are less thick, and their noses more inclined to the aquiline shape. They are among the most persevering and

industrious people on the west coast of Africa. As a rule, they are extremely parsimonious and consequently wealthy. They make excellent traders, and are very speculative. The men are generally very hardy, strong, and cunning in their dealings with each other, but they exercise the virtue of obedience and union for a common object of interest. They are jealous of each other and dislike opposition from members of their own tribe, but their chiefs have peculiar and secret means of enforcing obedience and respect, which may be rather suspected or hinted at than described. Their women are excellent traders. They are quiet in manner, and seldom show annoyance at the time if you have given them offence, although at some future time they may avenge it. The Akus of Sierra Leone are numerous, rising in wealth and influence; those who are educated are making great advances in civilisation and offshoots of them have settled at Lagos. Some of those instructed and educated at Sierra Leone have returned to Abeokuta, the principal town of their own country, and rendered good service towards the civilisation of their native state.

The *Eboes* are a numerous and thriving people at Sierra Leone and many of them have acquired wealth and influence. They come from a country on the west bank of the River Niger, not far from its fall into the sea, and those who inhabit that country are described as tall and robust, capable of enduring great fatigue, frequently paddling their own large canoes for forty-eight hours without taking food.

This description answers pretty well for those who have settled in Sierra Leone, although my own observation tends towards an opinion that those who have settled with us are of slightly weaker physique. They are called *Egboes*, *Igboes*, *Eboes* or *Iboes*, according as they inhabit various parts of the territory, but the people under these various names are really one race.

In colour they are much fairer than their neighbours nearer the coast, many of them being of a light copper colour. Their features are distinctly of the negro type, with retreating foreheads, flat noses, and thick lips. There are nine *Eboe* skulls in the Museum of the Army Medical Department at Chatham, which are all described by Staff-Surgeon Williamson as large, capacious, oval, and well formed, with marked negro characteristics. The teeth are prominent, but do not project very much. One skull, described as that of a notorious *Eboe* thief, is noticeable for great breadth between the eyes, projecting teeth, broad and thick lower jaw, and great weight of skull, it being 1 lb. 11 oz. 3 drs. That of an *Eboe* girl has an oval cranium, high, well-arched forehead, large nasal bones, great

breadth between the eyes, and slightly projecting teeth. In their own country the Eboes are distinguished by peculiar tattoo marks on their bodies, and the custom of tattooing is not altogether given up even by the more civilised Eboes of Sierra Leone, who are distinguished by three small marks on each cheek. I may, however, remark that the custom is gradually dying out.

One peculiarity of the Eboes is the superior social rank they ascribe to women, in which they form a pleasing contrast to most other uncivilised tribes, they have a strict Salic law, and never allow in their own country a women to occupy the throne.

I hasten to add, however, that my Eboe friends in Sierra Leone are as loyal subjects of Queen Victoria as any to be found within her wide dominions. They are an imitative people adapting themselves readily to the manners and customs of others. An Eboe gentleman of Sierra Leone, since deceased, not long ago attained to university honours in this country, and was called to the English bar, adapting himself completely to the manners and customs of the legal profession.

They desire to excel in whatever they undertake. It was noticed of the Eboes in the old slavery days that the degradation of slavery had a more galling and depressing effect upon their minds than upon those of most other tribes. They are of a determined nature, fierce and boisterous. Sir Richard Burton regards them in their uncivilized condition as one of the most ferocious and dangerous of African tribes. Their tempests of passion are quickly over.

Kroomen.—Whatever may have been the origin of the Kroos they are a very decidedly distinct and peculiar African people. One district of Freetown is inhabited entirely by the Kroomen, to whom the Government of the colony allow what I might almost call a modified sort of Home Rule in that district, that is to say, their petty disputes and small local disturbances are allowed to be settled by their own chief, who is called the Kroo king, the Government interfering only in serious cases. In one respect, they resemble the white people of the colony residing there for purposes of gain and trade without the intention of actual settlement. The Kroo population of Freetown is almost entirely masculine, there being very few females among the six or seven hundred of them. They are a most industrious, thrifty and intelligent people, contrasting in these respects most favourably with all other Africans. They are employed as boatmen, labourers, outdoor servants, and cooks. They all come from a part of the Grain Coast to the south, below Cape Palmas, known as the Kroo coast. The great ambition of a large number is to

save money and return to their native country, to have a plurality of wives, and enjoy for a time ease without labour.

As a people they are willing, quiet, and obedient workers: few of them have any religion at all. As a general rule, they are averse to the influences of civilisation, only a very few in Sierra Leone having adopted Christianity.

Their chief mental characteristic is a strong attachment to their native country, and their native manners and customs. Even on board H.M. ships, where numbers are employed, it is found advisable to permit their own headmen to exercise authority over them. They are seldom tall, but are well made, vigorous and active. As a race, they have more regular features than the lower class of negroes, and are distinguished from other natives of the coast by an appearance of muscular strength and a greater aptitude for labour. They have been nicknamed "the Scotchmen of Africa" from their love of emigration to seek their fortunes.

Their complexion varies much from a dark brown to a perfect black, yet a Krooman can always be recognised by a peculiar mark consisting of a broad blue black line running from the forehead down the face to the end of the nose. Many of the women are tattooed in this fashion.

The Kroomen have never engaged in the slave trade, having the greatest abhorrence of slavery. Even in the worst slave-trading days there was never, says Sir R. Burton, any amount of slave trading from the Kroo country.

In our recent expedition up the Nile the British Government engaged over 300 Kroomen on account of their special skill in boat management; 200 of these were drawn from Sierra Leone, and the official reports which I have perused accord them high praise. The opinion of their value as good workers is universal; but they do not bear a good character for honesty.

Outside the colonial borders our nearest neighbours are the Timmanees; a short canoe journey carries one into their country, where we find ourselves in the midst of native peculiarities, and in a state of society in some respects as little influenced by our vicinity as though it were 1,000 miles away.

The nation is extensive, but is now much divided. They were the original possessors of the soil of the settlement, the present country of the Timmanees borders each bank of the Roquette and Scarcies rivers, touching the Soosoos on the latter, and the territory of the Foulahs to the north-west. Our Government has treaties of friendship and peace with nearly all the Timmanee chiefs, many of them being in receipt of yearly stipends which they value. Yet we have not been without much trouble with them.

When speaking, however, of these countries bordering on Sierra Leone, it would be erroneous if we conceived them as being settled and homogeneous. The jurisdiction of any chief seldom extends beyond his own cluster of villages, and the rivalries of contending chiefs lead to a constant state of internecine strife. The practice of hiring war boys by contending chiefs who are paid only by plunder and the capture of prisoners who are kept or sold as slaves exists.

From these and other causes the Timmanee people, and, in fact, most of the border lands of Sierra Leone, are seldom long at peace, and their disturbances are a serious hindrance to the trade of the colony. The Timmanees themselves are a middle-sized, muscular, and well-formed race. Their language is harsh and guttural. They are pagans, believers in fetish. Some profess Mohammedanism, but more in name than practice. Polygamy is universal, and as a rule, they treat their women kindly. The dress of the men in the more uncivilised places is simply a small cotton cloth round the loins, but the well-to-do wear either the Foulah costume, or a sort of smock frock of native make, rudely dyed in yellow or blue patterns of native manufacture, specimens of which were displayed in the West African Department of the Colonial and Indian Exhibition.

By way of ornament, they wear all manner of articles, as fetishes, greegrees, amulets, talismans, and charms. The women wear personal ornaments of the same nature: a very peculiar article of female dress is a belt of beads placed at first on infants soon after birth and the custom never abandoned during life, being worn next the skin over the hips. The strings are commonly called jiggydahs, and form an article of trade and manufacture. The commonest are black, and made from cocoa and palm nut shells cut into beads; some again are of leather. There is no metallic currency among the Timmanees, or any other of the neighbouring tribes, but from their association and proximity to the coast, they understand and appreciate our coinage.

The country produces rice and benni seed in great abundance, and if peace prevailed very large quantities could be grown and sent to Freetown. The Timmanee dwellings are huts, often built so close together that a passage between them is difficult; they are sometimes square but mostly circular, and are made of wattle and daub, or sometimes mud; generally they possess only one room, but sometimes they are divided with a low partition. The seats are of hardened mud, the door a mat fastened against the opening. Cooking pots made of clay, and iron pots imported from England with cutlasses and baskets form the principal articles of domestic use.

A system of internal slavery exists, but it is in the main of a very mild character, and, unless in times of war, slaves seldom desert their masters.

The Mendis are a large tribe, occupying ground at the back of the Sherbro country. They are a warlike and, at times, a troublesome people. Their chief town is Tyama, about 150 miles inland. They are thorough pagans, and probably there is no tribe near to Sierra Leone that indulges so much in superstitions of every description. We have on more than one occasion found them useful allies. Journeys of some distance into their country were made by two colonial officials, Messrs. Budge and Laborde, at different times, and their accounts are most interesting.

At the present time their country is much disturbed by internal feuds. It is a matter of general opinion that that portion of their country which is near the coast is continually at war with some neighbouring chief whilst their interior regions are generally peaceful and given to agriculture.

The Mandingoes are perhaps the most industrious, energetic people of interior Western Africa. Among genuine negro tribes they have shown the greatest aptitude for improvement. They are zealous and sincere Mohammedans. Their traders are very generally distributed. Their colour is black, with an admixture of yellow, and in general physiognomy they bear more resemblance to the black races of India than to the negroes. Their hair is woolly. In stature they are tall and slim, and their figure is well formed. They are settled in great numbers in the Soosoo country, and although they live principally in the Futa Jallon country, they are to be found over a large area; in 1881 there were over 1,200 in Sierra Leone. Their chiefs attain to great power and influence. Where they settle they engage in trade, and such manufactures as may be open to them. They are skilful as blacksmiths and tanners of leather which they dye with skill and work up, and plait into patterns of various descriptions. Many samples of articles were to be seen in the Colonial Exhibition. They also form handsome articles with considerable taste with the dyed wools imported from Europe, and the Mandingo gowns formed an important feature of the West Africa Settlements exhibits. General opinion inclines to the belief that the physical and material superiority of the Mandingoes over other tribes is due to the circumstance that they have been long civilized, so far as the profession of Mohammedanism implies it, and it is not too much to suppose that had other uncivilised African tribes been subject to the same influence they would have been in a better condition than they are at the present moment.

Next to the Mandingoes, and allied to them are the Foulahs, a singular race of people who, during the present century, have spread themselves as conquerors over a great part of the interior. They are distinguished by a very light complexion (looking down upon the negroes, as—being themselves whites—they are frequently not much darker than may be seen in the south of Europe), and a cast of features approximating more to the European or Arab type than to the negro. They have long black ringlets hanging down to their shoulders, thoughtful eyes, and they move with measured steps.

There are, however, some Foulahs, who through intermarriage with negroes have become of a black complexion. Foulah traders visit Sierra Leone from even the most distant parts of the interior bringing with them gold, ivory, and various articles of produce. These are usually rich, though not by any means cleanly in person or habits. The Foulahs, who are settled in Sierra Leone and its neighbourhood, are handicraftsmen of various kinds, making sandals and pouches, plaiting straw for hats, or writing out verses of the Koran, which may be sold for greegrees or charms. They also work as gold or silversmiths, the rings of precious metals marked with the signs of the Zodiac shown in the Exhibition, may be taken as specimens of their skill. They also excel in steel, and the leather work for which Africa has been long famous. They are believed to be a mixed race sprung from the Berber inhabitants of the African shores of the Mediterranean, with a considerable infusion of Arab blood. Their precise origin is an unsettled question, but at all events, like the negro Mandingoes, they have acquired, and are still acquiring, considerable power among all the interior races whom British influence as yet scarcely reaches, and of whom we know very little.

The Soosoos occupy a country north-east of Sierra Leone from the River Kissi Kissi, extending beyond the Rio Pongas nearly as far as Rio Nunez.

Large numbers of them are still heathens, but most are Mohammedans: they were originally a branch of the Mandingo race, but, migrating to this country, dispossessed the former inhabitants, the Baggas, and others, and by frequent intermarriages with them, now form a distinct people. They were once very powerful and warlike, that is according to African standards, and the Timmanees, their neighbours, had to appeal to the Colonial Government for assistance against them, but of late years the Timmanees have been able to hold their own against them. Their language is soft, pleasing, and musical, and has been termed by some the Italian of West Africa; it is spoken over a great part of West Africa, and is understood by many Foulahs and Mandingoes.

They are, for Africans, fairly industrious, and send considerable quantities of produce into the colony. Some of them are tall, fine-looking men. Domestic slavery prevails extensively, and they have proved very intractable to civilising processes, although apt and quick to learn. Many of them become war boys.

The Sherbros form a large population of British subjects, their country having been annexed to the colony in 1861 by Governor Hill. These manifest the advantages of being placed under settled rule, and are becoming an orderly and tolerably prosperous community. Their progress in peaceful trading is retarded by perpetual broils and wars among the fiercer tribes around them.

But as the advantages of quiet and good order become more and more widely known, there is a greater influx of inhabitants from among the wild tribes who settle down as peaceful subjects of Her Majesty. The trade of the rivers, in spite of the frequent disturbances, affords an important contribution towards the prosperity of the colony.

When I add that, until very lately, the Sherbro country was one of the principal seats of the external slave trade, the present improved condition of its people must be the more gratifying. The people are lighter in colour, and of weaker physique than the Sosoos. The Vei or Vey people, whose country lies between Cape Mount and Cape Mesurado, are spread over a country along the coast to the south of Sherbro, of which very little is known, and which is not much visited, but the coast line of which, as far as the territory of Liberia, has lately been added to British jurisdiction. There are a number of small and perpetually discordant tribes spread over this country, among whom the Veis occupy a position of some superiority. These people are remarkable among Africans for having invented an alphabet and written language of their own, not being derived from those of any other people, and which has become extensively known and used among the natives of the West coast.

There are several interesting customs prevalent among nearly all the tribes of whom I have spoken, but I fear I have trespassed far beyond the limits of this paper, and will, therefore, name them as shortly as possible.

One is the custom of circumcising not only the males but also the females. This is called Boondoo. It is particularly prevalent among the Mendis and the Sosoos. Several Boondoo masks, and other articles connected with the rite, were shown in the Colonial and Indian Exhibition. Girls of eleven to fourteen years of age and older are taken into the Boondoo bush

and kept in seclusion under strict watch by certain old women who have charge of the ceremony, while they are taught Boondoo songs and dances. After a certain period the operation is performed of excising the clitoris at midnight, and under a full moon, with much singing, dancing, and hideous noises by the women, the presence of men being specially forbidden.

The girls are then cut on their backs and loins in such a manner as to leave raised scars which project above the surface of the skin about one-eighth of an inch. They then receive Boondoo names, and after recovery from the painful operations, are released from Boondoo with great ceremony and gesticulation by some who personate "Boondoo devils," with the hideous masks, &c. (shown in the Sierra Leone cases). The girls are then publicly pronounced marriageable.

Of kindred character is the institution of Porroh among the men. There are two kinds, the religious and the political. No one is admitted to Porroh without being circumcised. He must live in the Porroh Bush for a time strictly secluded, especially from the sight of women, during which time he is said to be eaten by the Porroh devil. After he is initiated he receives a Porroh name, and is released; such is a brief outline of the religious Porroh.

The political Porroh is more select, and is used for arranging the affairs of the tribes, settling disputes and making laws. Wars are sometimes said to be stopped by arbitration of the Porroh. It is known, however, that Porroh is often used for bad purposes, and much of the trouble arising on the borders of Sierra Leone is traceable to Porroh, and the scheming and mischief which is hatched in its seclusion. Its representatives or messengers are always held sacred like the ambassadors or heralds of civilised countries. Mohammedan traders, and even some Europeans, have been known to be admitted as Porroh men for the sake of gaining political influence.

The field for anthropological observation afforded by the mixed populations in and around Sierra Leone is so extensive that, although I have been able to glance at only a small portion of it, and to speak as briefly as possible, I have said sufficient to show how much instruction and advantage may be derived from its more extensive study.

DISCUSSION.

Sir JAMES MARSHALL, on being called upon to speak, said that he had never resided in the Sierra Leone Settlements, and therefore could not make any remarks on Mr. Risely Griffiths' paper. The speaker's residence was on the Gold Coast, and in confirmation of the view that the language spoken at Sierra Leone is one of its

own, he added that whenever Sierra Leone people appeared in Court he had to get the services of an interpreter.

Captain MALONEY, Governor of the Gold Coast, also joined in the discussion.

The Rev. GEORGE BROWN then made some remarks on the "Papuan and Polynesians," but the formal reading of his paper on this subject was adjourned until the next meeting.

DECEMBER 14TH, 1886.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

The Minutes of the last meeting were read and signed.

The election of J. A. OTONBA PAYNE, Esq., of Lagos, as an ordinary member, and of W. J. HOFFMAN, Esq., M.D., of Washington, D.C., U.S.A., as a corresponding member was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the AMERICAN LIBRARY ASSOCIATION.—The Library Journal. Vol. II, No. 1.

From the UNITED STATES' GEOLOGICAL SURVEY.—Bulletin, Nos. 27-29.

From Professor AGASSIZ.—Annual Report of the Curator of the Museum of Comparative Zoology at Harvard College, for 1885-86.

From the AUTHOR.—Congrès International des Américanistes. Sixième Session, Turin. By Baron J. de Baye.

— Die Herkunft der Arier. By Karl Penka.

— Ueber eine in zwei Zipfel auslaufende, rechtsseitige Vorderflosse bei einem Exemplare von *Protopterus annectens*, Ow. By Prof. Dr. Paul Albrecht.

— Ueber den morphologischen Werth überzähliger Finger und Zehen. By Prof. Dr. Paul Albrecht.

— Ueber den morphologischen Sitz der Hasenscharten-Kieferspalte. By Prof. Dr. Paul Albrecht.

— Ueber die morphologische Bedeutung von Penischisis, Epi- und Hypospadie. By Prof. Dr. Paul Albrecht.

— Ueber die morphologische Bedeutung der Penischisis, Epi- und Hypospadie des Menschen. By Prof. Dr. Paul Albrecht.

From the AUTHOR.—Zur Diskussion der die Hasenscharten und schrägen Gesichtsspalten betreffenden Vorträge der Herren Biondi und Morian. By Prof. Dr. Paul Albrecht.

— "Herr Paul Albrecht zum letzten Male." Antwort auf den gleichnamigen Aufsatz des Herrn Geheimrathes Professor Dr. von Kolliker vom 12 August, 1885, in den Sitzungsberichten der Würzburger Physicalisch - medicinischen Gesellschaft vom Jahre 1885, von Prof. Dr. Paul Albrecht.

From the ACADEMY.—Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg. T. xxxi, No. 2.

— Boletín de la Academia Nacional de Ciencias en Cordoba. Tom. viii, Ent. 4.

— Atti della Reale Accademia dei Lincei. Vol. II., Fas. 5, 6.

— Pamiętnik Akademii Umiejętności w Krakowie, Wydział Matematyczno-Przyrodniczy. Tom. x, xi.

From the ASSOCIATION.—Proceedings of the Geologists' Association. Vol. 9. No. 7.

From the INSTITUTE.—Proceedings of the Canadian Institute. No. 146.

From the SOCIETY.—Journal of the Society of Arts. Nos. 1775-1777.

— Proceedings of the Royal Geographical Society. 1886. December.

— Proceedings of the American Philosophical Society. No. 123.

— Boletín da Sociedade de Geographia de Lisboa. 6a Serie. No. 5.

From the EDITOR.—Nature. Nos. 891-893.

— Science. Nos. 197-198.

— Photographic Times. Nos. 269-272.

— American Antiquarian, 1886. November. Vol. viii. No. 6.

— L'Homme, 1886. Nos. 17, 18.

— Matériaux pour l'Histoire primitive et naturelle de l'Homme. 1886. November.

The following paper was read in the author's absence by Dr. E. B. TYLOR, F.R.S. :—

PAPUANS and POLYNESIANS.

By the REV. GEORGE BROWN.

AMONGST the difficult questions of the day, are those of the original home of the races which inhabit Australia and the large groups of islands in the Pacific, and their affinity and identity with each other. They present such diversities of appearance, of language, and of customs, that the attempt to reduce them to

a common type might almost be considered a hopeless one. The tendency, however, of anthropological science of the present day is to decrease the number of so-called special types in the Pacific. But opinions differ very much indeed as to the number of types to which the inhabitants of Australasia may be referred, and also as to the names by which they are to be distinguished.

The aboriginals of Australia present, perhaps, the greatest difficulty. Wallace, whilst maintaining that "the distinction that has been drawn between the Papuans proper and a special Melanesian type seems needless and fanciful," also declares that "the Papuan must not be identified with the Australian, the results of extensive philological researches being entirely opposed to such a conclusion." One must needs be careful when venturing to dissent from such a careful observer and writer as Mr. Wallace is; and I do not now maintain that the identity of Australians and Papuans can be proved. All that I wish to notice is, that the only proof which Mr. Wallace gives as a reason for his opinion, namely, that "the Australian idioms are characterised exclusively by suffix formations whereas the Papuan tongues shew a preference rather for prefixes, a fundamental difference altogether excluding any relationship between the two linguistic systems," is not borne out by our knowledge of Papuan dialects. I think Mr. Wallace has, in this instance, confounded the older Papuan with the later Polynesian language. The Papuan languages are all full of suffix formations; so that this "fundamental difference" at all events does not exist. It will be well, however, here to state what is one object of this present paper. For many years of my mission life I quietly accepted the old Malayo-Polynesian theory of the origin of the Polynesian races, and of course regarded the black frizzly-haired Melanesians or Papuans as constituting a radically distinct and separate race, with no identity in origin and little or no affinity in language. It was, however, my duty after spending some fourteen years in Samoa, to be stationed for some years amongst a purely Papuan people who were absolutely untouched by foreign influences, and whose language had never been reduced to a written form. A comparison of their language, manners, and customs, did much to shake my belief in old theories; and whatever position may be assigned to the Australian and Tasmanian races, I am pretty confident that there are no insuperable difficulties in classing the Papuan and Polynesian races under one general type, the Papuan constituting the older branch of the family. This is substantially the theory advanced by Mr. Wallace in his "*Malay Archipelago*," where, after describing the different races, he says (p. 592) "I

believe, therefore, that the numerous intermediate forms that occur among the countless islands of the Pacific, are not merely the result of a mixture of these races, but are, to some extent, truly intermediate or transitional; and that the brown and the black, the Papuan, the natives of Gilolo and Ceram, the Fijian, the inhabitants of the Sandwich Islands, and those of New Zealand, are all varying forms of one great Oceanic or Polynesian race.

It is, however, quite possible, and perhaps probable, that the brown Polynesians were originally the produce of a mixture of Malays, or some lighter-coloured Mongol race with the dark Papuans; but if so, the intermingling took place at such a remote epoch, and has been so assisted by the continued influence of physical conditions and of natural selection, leading to the preservation of a special type suited to those conditions, that it has become a fixed and stable race with no signs of mongrelism, and showing such a decided preponderance of Papuan character, that it can best be classified as a modification of the Papuan type. The occurrence of a decided Malay element in the Polynesian languages, has evidently nothing to do with any such ancient physical connection. It is altogether a recent phenomenon, originating in the roaming habits of the chief Malay tribes; and this is proved by the fact that we find actual modern words of the Malay and Javanese languages in Polynesia, so little disguised by peculiarities of pronunciation as to be easily recognisable—not mere Malay roots, only to be detected by the elaborate researches of the philologist, as would certainly have been the case had their introduction been as remote as the origin of a very distinct race, a race as different from the Malay in mental and moral, as it is in physical, characters."

Mr. Wallace, in his "*Australasia*" has somewhat modified this opinion, and states (p. 261) "The editor of this volume has always maintained that the brown Polynesians are really quite distinct from the Malays, and, except in colour, seem to have more affinity with the dark woolly-haired races of the Pacific; or, which now seems more probable, are equally distinct from both." This view is supported by two writers who have great knowledge of the races and languages of the Pacific. The late Mr. W. S. W. Vaux, in a paper on the "Probable Origin of the Maories," read before the Anthropological Institute in 1876, maintains that there was once a distinct Polynesian language, and that the connection of the modern languages of the brown Polynesians with the Malay is by no means so intimate as many able philologists have asserted. Still more important and weighty is the evidence of Mr. W. L. Ranken, who, in a paper

on the "South Sea Islanders," read before the same society a few months later, proposes the native term "Mahori" for the brown Polynesians, and shows that their language is totally distinct from the Malay, has a different construction, has very few Malay roots, and only a few quite recent Malay words. Though resembling Malays both physically and mentally in some respects, the Mahoris differ greatly from them in others. They have a much greater average height, their features are much more of the European type, and their hair is typically wavy. He traces this race to Samoa as their first home in the Pacific, but primarily from some part of the Asiatic continent. He says, "we are thus led to these conclusions; that they are of some kindred race to the Malays, of Mongolian stock; that they have separated from that stock as distinctly, and perhaps as early, as the Malays themselves, and always had a distinct language; that they dwelt some time in Papua, and perhaps in other lands of the Malay Archipelago, and there learnt some new words from Malay traders; thence they migrated to Samoa, and have since colonised the South Sea, sometimes displacing Papuan settlers. In spreading northwards from Samoa they met another branch of their own family in the Kingsmill Islands, who had probably travelled along the Caroline Archipelago from the Philippines, and show another exodus of the same family about the same time. This convergence of the views of three modern writers, each starting from a different point and reasoning from a distinct set of observations, as to the radical distinctness of the Malays and the brown Polynesians will justify us in giving up the term Malayo-Polynesian as altogether misleading."

It is in my opinion unfortunate that Mr. Wallace did so modify his original theory. It will also be seen that I differ from Mr. Vaux and Mr. Ranken, principally on one point only, namely, that they, whilst maintaining that the Polynesian is distinct from the Malay, also maintain that he is radically distinct from the Papuan, whilst I maintain his original identity with that race.

Professor A. H. Keane, who, in "Nature," and in this Journal has contributed a good deal to the literature of this subject, divides these races into three families.

I. The dark races, which embrace—

(a) Australians.

(c) Negrito, as *Æta*, *Samang*, and *Mincopies*, or *Andaman Islanders*.

(i) Papuans, with east and west branches.

II. Brown, or Indo-Pacific races, embracing—

- (a) What has usually been called the Malayo-Polynesian race; but which he calls Mahori.
- (e) Mikronesians.
- (i) Malays proper.

Mr. Keane maintains ("Journ. Anthropol. Inst.," Vol. ix) that the difference in language and physical types of the brown races are far too varied to be derived from one stock; that there are elements in the Malay language and races absolutely non-existent in those of the Eastern Pacific, while the Polynesian possesses characteristics of type and speech it could not have derived from the Malay. That Crawford is astray in assuming that the common linguistic element of all the brown people from Madagascar to Easter Island is not organic but of recent date, and borrowed from the Malay. On the contrary, this universal element is fundamental, pre-historic, a joint inheritance, coeval with the first dispersion, preserved more faithfully by the eastern branch than by the Malayan.

He declares that Mr. Wallace rightly separates the Malays from the Papuans, and connects them with the Mongolians.

"I substitute," he says, "for Malayo-Polynesian Indo-Pacific." He sums up his own conclusion as follows:—

I. Both of the great Asiatic types, the Caucasian and Mongolian have occupied the Indo-Chinese peninsula.

II. The brown races of Malaysia consist exclusively of these two elements variously intermingled, the Caucasian being the substratum.

III. The large brown Eastern Polynesian consists exclusively of the Caucasian element.

IV. Negrito Autochthones of Indo-Chinese and West Malaysians, have been rather supplanted than absorbed by Caucasian and Mongolians.

V. The Papuan Autochthones of Eastern Malay and Western Polynesian have been absorbed rather than supplanted, the fusion producing Melanesians in the east, and Alfuros in the west.

Their movements were first south from Asia, then from the Archipelago east to the Pacific. The lighter races, the aggressors, extirpated the Negritos in Western Polynesia, but intermingled with the Papuans in the east.

There is no Malayan type. It is not a racial designation.

What relations are the brown Malaysian to the brown Polynesian? His view is that the Caucasian Malayan broke away east at the same time as the arrival of the Mongolians, and that the Sawaiori are their descendants.

Prof. Keane also maintains, in the appendix to Wallace's

"Australasia," that the Malayan is rather a modification of the Mahori (Polynesian) than the reverse (p. 611). He says the Mahori is a pure and unmixed race if any such is still to be found any where on the globe. Then to get rid of the difficulty found in the fact that the Mahoris have, as stated, almost certainly migrated from their present Malayan region eastward to their actual Pacific domain, he supposes the Eastern Archipelago to have been originally peopled by Polynesian races. In proof of this he describes Mantawey Islanders as pure Polynesians. The presence of the Mahori (Polynesian) people on the extreme western boundary of the Malayan dominion, cannot, he says, be accounted for by assuming a more recent migration across all the vast and often densely peopled Papuan and Malayan region, from Samoa westward to or beyond Sumatra. "Hence," he says, "the inevitable conclusion that these Manataweys are here autochthonous, possibly the only remnant of the Western Mahoris that has escaped contact and fusion with the intruding sub-Mongolian and other Asiatic races. In short, the Mahoris went eastward, while the common speech was still everywhere in its present primitive state, and before, or possibly even in consequence of the eruptions from the north—eruptions modifying in the west the type which preserved its purity under exceptional circumstances in the east" (p. 613). In this latter idea he seems to agree with Fornander; but the great difference which exists between Mr. Keane, and those who think with Mr. Wallace, Mr. Wake, and others is, that he still adheres to his assertion that the Papuan and Polynesian (or *Mahori* as he calls them) constitute absolutely distinct and separate races.

Judge Fornander, of Hawaii, has written fully on the question, and his theory will be shown by the following extracts in which he sums up "I think the facts collected in the foregoing attempt to satisfactorily solve the question of the Polynesian origin, will warrant the conclusion that the various branches of that family, from New Zealand to the Hawaiian group, and from Easter Island to the outlying eastern portion of the Fiji Archipelago, are descended from a people that was agnate to, but far older than the Vedic family of the Arian race; that it entered India before these Vedic Arians; that there it underwent a mixture with the Dravidian race, which, as in the case of the Vedic Arians themselves, has permanently affected its complexion; that there also, in greater or less degree, it became moulded to the Cushite-Arabian civilisation of that time; that, whether driven out of India by force, or voluntarily leaving for colonising purposes, it established itself in the Indian Archipelago at an early period, and spread itself from Sumatra to Timor and

Luzon; that here the Cushite influence became paramount to such a degree as to completely engraft its own legends, myths, cult, and partially its institutions upon the folk-lore and customs of the Polynesians; that it was followed in this Archipelago by Brahmanised or Buddhist Ario-Dravidians from the eastern coasts of Deccan, with a probably strong Burmah-Tibetan admixture, who, in their turn, but after protracted struggles, obtained the ascendancy and drove the Polynesians to the mountain ranges and the interior of the larger islands, or compelled them to leave altogether; that no particular time can be assigned for leaving the Indian Archipelago and pushing into the Pacific, it may have occurred centuries before the present era, but was certainly not later than about the first century of it; that the diversity of features and complexion in the Polynesian family, the frequent broad forehead, Roman nose, light olive complexion, wavy and sometimes ruddy hair, attest as much its Arian descent and Cushite connection as its darker colour, its spreading nostrils, and its black eyes attest its mixture with the Dravidian race; and, finally, that if the present Hindu is a Vedic descendant, the Polynesian is *a fortiori* a Vedic ancestor" (pp. 159, 160).

Mr. C. Staniland Wake is one of the more recent writers who combats Mr. Keane's opinions, and substantially agrees with Mr. Wallace in the most important points. Mr. Wake objects to Mr. Keane's definitions and classification, more especially as regards his first class of dark races, in which he includes Negritos, Papuans, and Australians. Wake argues that the great difference in the long straight hair of Australia, and the woolly and frizzly haired Negrito and Papuan is against this classification. Also that Australians and Papuans are full-bearded and Negritos are beardless, also Negritos are short-headed and Papuans are long-headed. Wake then says ("Journ. Anthropol. Institute," vol. xii) "that it may be much doubted whether the Polynesians do not in reality possess as many features in common with the Papuans as with the Caucasian tribes of Indo-China" (p. 204); and a little further on he says "the existence of differences of no little importance between the Polynesian and Papuan is perfectly consistent with those races having been derived from a common stock." He attaches also great importance to the fact that in the Malay Archipelago are natives intermediate between the two, namely, Ceram, Bouru, &c. Wallace, however, describes these Ceramese as undoubted Papuans (p. 401). Wake sums up as follows:—

1. The Eastern Archipelago was at a very early period inhabited by a straight-haired race belonging to the so-called

Caucasian stock, the purest modern representatives of which are the Australians.

2. To this race belonged also ancestors of all the Oceanic races, including the Papuans, Micronesians, Tasmanians, and the Polynesians.

3. The special peculiarities of the dark races are due to the introduction of various foreign elements, the Negritos having influenced all of them in varying degrees.

4. The lighter Oceanic races show traces of the Negrito influence; but they have been affected at various periods by intermixture with peoples from the Asiatic area, giving rise on the one hand to the so-called savage Malayan, and on the other to the Polynesians, who have been specially affected by the Malays.

5. Traces of an Arab or Semitic element are apparent among the dark and light Oceanic races, but chiefly among the Papuans and the Melanésians, the former of whom may also possess a Hindu admixture.

These conclusions probably require, as Mr. Keane supposes, the Negritos to have been the earliest inhabitants of the Eastern Archipelago; but there is less truth in Mr. Keane's further supposition, that this primitive race, spreading north over the Asiatic continent, became, under more temperate climes, different, first into the yellow Mongol, and then, through it, into the fair Caucasian type, returning in subsequent ages to its original home of Malays and Polynesians.

He then adverts to Whitmee's theory, "that not only are the whole of the Malayo-Polynesian languages, together with those of the Indian Archipelago and the Malagasy, more or less changed branches from an original root-stock, of which the Malay is more changed than any of the others; but that first the Papuan language and then the Australian must be affiliated to the same stock, the original form of which they approach still nearer to than either the Malay or the Polynesian branches." This opinion, which agrees with that of other competent authorities, coincides with my theory, and it would be no less strongly supported by a consideration of the manner and culture of the Oceanic races.

Keane replied to Wake, very strongly objecting to some of his conclusions. He said "the linguistic element, treated vicariously if not altogether ignored by Wake, possesses in this area quite an exceptional importance. Hence it could not be too widely known that after fuller research Von der Gabelentz had abandoned his former views and now held that the Papuan and Polynesian languages, like the races, were fundamentally distinct. In this conclusion Dr. A. B. Meyer acquiesced, and there

could be little doubt that Mr. Codrington would agree with Mr. Whitmee that the two forms of speech had nothing in common beyond superficial resemblances, or what might be due to mutual borrowings."

A *resumé* of this may now be given. Wallace believes that these peoples are all varying forms of one great Oceanic or Polynesian race. Keane believes in two distinct races amongst the blacks, and that the Mahori, so far from being a modification of the Malay, is a pure language; and, as he thinks, the Malay is more probably a modification of the Mahori or Eastern Polynesian. He also maintains that the Papuan and Mahori are essentially and radically distinct races and languages.

Fornander believes that the Polynesians were the original inhabitants of Malaysia prior to the irruption of Malays; that they were driven out from there and so peopled Eastern Polynesia. He also maintains that the Papuan and Polynesian are distinct peoples.

Mr. Wake believes, as already quoted, that the Eastern Archipelago was once inhabited by a straight-haired race belonging to the so-called Caucasian stock, of which the aboriginal inhabitants of Australia are the purest modern representatives; that these were the ancestors of all these Papuan and Polynesian peoples, and that the special differences which exist amongst them are due to the introduction of various foreign elements, the Negritos having influenced all of them in varying degrees.

He accounts for the lighter races as having been specially affected by admixture with peoples from the Asiatic area, and so giving rise to the so-called "savage Malay," on the one hand, and to the Polynesian on the other ("Journ. Anthropol. Inst.," vol. xii.)

There are, of course, some other theories, such as that of Taylor (*Te Ika a Maui*) and others, that the Polynesians came from America, but I do not discuss them now.

My own opinion is that Mr. Wallace and Mr. Wake are very much nearer to the truth than any of the others. I cannot, however, now go into the question of the original habitat, and their Aryan or Turanian affinities. Though I think it will not be difficult to show that they have been affected by both races at different periods, I cannot decide the question either as to the first conclusion of Mr. Wake, that the Archipelago was originally peopled by a race of straight-haired blacks, of which the Australian black is the purest representative. There are many customs of these blacks very similar indeed to those of the Papuans of the Western Pacific, and I think that their

language will certainly be found to be more closely connected with Papuan than with this later Polynesian.

I think it is extremely likely that there was originally one great race occupying these different groups, as far west at least as Borneo and probably extending upon the mainland on the side of Siam, the Malacca Peninsula, and perhaps as far as Burmah, which probably at that time formed part of one vast continent. The traces of these peoples are or have been found in all the different groups, from the black races found in New Zealand by the original Maori colonists, and who were derisively called by them "black kumara," to Western Malaysia, and also on the mainland. The Papuans of the present day are the purest representatives of this race. In Malaysia this pre-Malayan race was modified by admixture with the Turanian races of the mainland of Asia; and this constituted the present Polynesian race, which still retains so much of its old Papuan element. This intermixture will probably account for some if not all of the differences which exist to-day between the brown and the black races, as they are found on the different groups. At this period I think it likely that the migration eastwards set in, probably caused by the encroachments of Malay and Hindu immigrations as Fornander states. In fact, the principal difference between Mr. Fornander and myself is that I hold that the basis of the Polynesian is Papuan with Asiatic admixture; whilst he describes it simply as a separate and distinct ante-Malayan race, which drove out the Papuan peoples only in turn to be themselves driven out by the Malays, and so compelled to look for other lands on which to settle.

Names of Races and their Location.

When we consider the great difference of opinion as to the original habitat and affinity or otherwise of these peoples, it will be no matter for surprise that a great difficulty has been found in fixing upon names for them which would describe the people without committing the writer to any particular theory. The names, in fact, are nearly as numerous as the theories have been and are. Malayo-Polynesia is virtually abandoned, however, by all parties. For the brown races the term Sawaiori, Mahori, and a lot of others, have been proposed; and an equal number also for the black races. It would scarcely be right here to enter into an explanation of the reasons why I do not employ any of these fanciful names. I shall use the term *Eastern Polynesian* or simply *Polynesian*, to represent the brown races wherever found, and the term *Western Polynesian, Papuan, or Melanesian*, to represent the black races of the Pacific, who are principally found now in a pure state only in the western groups.

The Eastern Polynesian people inhabit, amongst other groups, Samoa, New Zealand, Friendly Islands, Niue, Ellice Group, the Hervey Group, Tahiti, Marquesas, Sandwich Islands, Madagascar, and other smaller islands, some of which, such as Lord Howe's Group, Steward's Group, &c., are found in very close proximity to islands peopled by pure Papuans.

The Western Polynesians inhabit New Guinea, New Britain, and New Ireland, Admiralty Groups, Solomons, Santa Cruz, New Hebrides, New Caledonia, and many other islands and parts of islands outside of these areas.

The Eastern Polynesian may be described as of a light brown with varying shades of colour. Perhaps the best illustration is that of the colour of a cup of coffee, with the ordinary quantity of milk in it, perhaps a little brighter in colour and darker or lighter as the coffee may be made by the proportion of milk put into it.

The hair is curly or waved, not straight like that of the Malay. In fact, in Samoa, they call straight hair "*lauulu valea*" or foolish hair, an incidental mark, I think, of the survival of the old Papuan love for the large frizzly mops of hair, which in his opinion are so essential to beauty. The stature is fully equal to that of the ordinary European. They are a cheerful and joyous people, and fond of amusement. They have hereditary chiefs, descent is traced through the father, and also through the mother, especially if she is of higher rank than the father. The language is soft and musical, every syllable being open and no consonantal terminations. They have a great respect for rank, and this is often irrespective of the physical power, appearance, or wealth of the possessor. A good speaker will always command respect and attention, often far greater than that to which his rank would entitle him.

The Western Polynesian or Papuan is generally of a sooty brown or black colour, though this colour is said to vary in New Guinea from the black colour of the typical Papuan, to the light brown of the Polynesian. I may mention here also the fact that no two writers can agree in a description either of a typical Papuan or Polynesian, which of itself surely favours the presumption that they are not two absolutely distinct and separate races. The Papuan is frizzly-haired and full-bearded generally, though in this respect also the races differ very much from each other. He is generally tall and lanky, and not so well formed and developed as the Polynesian. There is no hereditary chieftainship, descent being through the mother only. In most islands, if not in all, there are class divisions which cannot intermarry in their respective classes. The Papuan, where unaffected by Polynesian admixture as in Fiji, pays but little attention to rank unless it is backed by physical power or by the possession of wealth, which

may enable the possessor to do mischief. The language is very full and expressive; the dialects are as numerous almost as the tribes, every petty district on some islands having a separate and distinct dialect, which is often unintelligible to people living only a few miles away. These languages admit of consonantal terminations, and are many of them more agglutinating than those of Eastern Polynesia are found to be. These are only a few of the principal characteristics which may be observed, but it will be seen at once how difficult it is to describe the typical specimen of either race. I have only described some of the principal differences, but in order to show that there is a much closer affinity between the two races than is generally supposed, I will discuss some of these differences in detail.

Language.

Professor Keane's principal complaint against Mr. Wake's paper ("Journ. Anthrop. Inst.," vol. xii, p. 221) was that his arguments in favour of that essential difference of the two races as proved by their language had not been fairly dealt with; and he stated that the conclusion of his own paper was, that whatever might be the relationship of other stocks, the dark frizzly haired, hook-nosed, hypsistenocephalic Papuans of fully developed agglutinating speech, had no perceptible affinity, beyond their common manhood, to the tall brown, somewhat lank-haired, straight-nosed, brachycephalic Eastern Polynesians of almost isolating, or very faintly developed, agglutinating speech.

It would be out of place here to enter very fully into this matter. I can only state that after 14 years spent in the study of one of the purest and softest Eastern Polynesian dialects which is known, I went to live amongst a purely Papuan people, knowing absolutely nothing of these differences of opinion, and never having heard that any man in this world had ever questioned the fact that the two languages and the two races were absolutely and radically distinct and separate. There was no white man in the New Britain Group when I landed, and in fact most of the places had never been visited by either Europeans, Malaysians, or Polynesians. The language had never been reduced to writing, and there were of course no interpreters. My first task was to learn the language as best I could; and afterwards to reduce it to a written form. In this we succeeded so far that we have now a vocabulary of at least 6,000 words, with a fair grammar of the language. The Gospel of St. Mark has been translated and printed, and is read intelligently by the natives. The gospel of St. Matthew has been translated and revised by the missionaries since I left the group, and is now ready for the press.

It was during my work of writing the grammar and vocabulary

and translating that my opinions changed, and that I was led to believe that the differences which exist to-day in the language and customs of these people, so far from proving their absolute difference from each other, may be used to show that they are essentially the same. I was surprised to find not merely purely Eastern Polynesian words used to express identical meanings, but in our attempt to dig down into the heart of the language I unearthed Polynesian roots which, though not used to express the same shade of meaning, were employed to express one which was strictly analogous, if not absolutely identical. I am well aware that we cannot prove identity of origin from similarity in language, and also that the fact of a certain number of Malayan or of Eastern Polynesian words found in a Papuan language apart from any similarity in grammatical construction, by no means proves that they are derived from a common stock. But I purpose dealing with this part of the comparison first.

From a hasty comparison, I have selected some 170 words which all express similar meanings in different languages, namely Duke of York, a Papuan dialect, Samoa, which is said to be the original Hawaiki from which the Polynesians went forth, and Maori, which was one of the latest places colonized by them. The synonyms of the words found in Samoan or Maori would also, as is well known, be likewise found in almost every other Polynesian language.

Examples of Words used in the same Sense.

English.	Duke of York.	Samoa.	Maori.	Miscellaneous.
Outrigger ...	aman ...	ama ...	ama ...	ama, Tah.
Canoe ...	ata ...	vaa ...	waka ...	vaka, Niue.
Fish ...	ain ...	ia ...	ika ...	ika, Niue, ia, Tah.
Spear ...	bele ...	tao ...	pere ...	N.B. orig. means reappear.
Knot in sling ...	burum ...		purumu ...	
Breathe ...	ga ...	ga (Tutuila) ...	ga ...	gaé, mânava, Sam.
Class or company ...	kaba ...		kapa ...	very interesting.
Dig ...	killi ...	ele ...	keri ...	
Fluck ...	futi ...	futi ...	huri ...	huri, Tah.
Eye, face ...	mata ...	mata ...	mata ...	
Grow ...	tubu ...	tupu ...	tupu ...	tupu, Tah.
Turn over ...	buli ...	fuli ...	huri ...	
Plait ...	piri ...	sili ...	whiri ...	firi.
Hear ...	logoroi ...	logona ...	rogo ...	fanogonoga, Niue.
Die ...	mat ...	mate ...	mate ...	mas, Aneiteum.
Fly ...	lag ...	lago ...	rago, garo ...	rao, Tah., inlag Aneiteum.
Ship ...	parau ...	folau ...		{ prahu } Malay.
Rise up ...	ragaragai ...	lagalagai ...	ragai ...	
Lift ...	tiki ...	sil ...	tiki (fetch) ...	{ nikiré Niue, Siki Fiji.
Land ...	wanua ...	fanua ...	whenua ...	{ Tii, Tah., Hiki, Tong.
Female ...	wawine ...	fafine ...	wahine ...	{ fonua, Tah., benua enua,
Tame ...	la ...	lata ...	rarata ...	{ vanua, Malay.
Sick ...	marua ...	luai ...	ruaki ...	vahine, Tah., fefine, N.G.
First ...	mu'a ...	mua ...	matamua ...	rata, Tah.
				ruai, Tah.
				mua, Tah.

Examples of Words in Slightly Altered form or Expressing Different Shades of Meaning.

English.	Duke of York.	Samoa.	Maori.	Miscellaneous.
Fish (n) ...	ika, to fish for shark	lá (n) ...	ika ...	ika, Niue, lá, Tah.
Clump of bamboo	butu ...	putu, close together		
Shady ...	madandan ...		mahan, verandah...	
Bamboo ...	kauru ...	óte ...	kauru, root of ti, to eat ...	
Blind ...	pula ...	exactly opposite	pura, a mote in the eye ...	
Hide ...	parau ...		parau, a lie ...	
Shame ...	maimai ...	ma ...	maimai, a taunting song	
Clear land	raku ...	laú, carry away	raku, a rake ...	
Ancestors	tubuna, grandfather	tupuga ...	tupuna ...	
Soft ...	malua ...	malulu ...		
Stutter ...	mamaga ...	maga, to open the mouth		
Thunder...	pakpakura ...		paku, to make a sudden noise	pakulagi, Niue.
Chaplet ...	parik ...	pale ...	pare ...	
Swing ...	rururu ...	luclue ...	ruru, to shake ...	
To sun ...	wara ...	taala ...	ra ...	the Duke of York here shows the Polynesian ra, rama, torch, Tah.
Cocoa nut	lama ...	aulama, the dry leaves		
Decrease, shrink	mariri ...	malili, to fall off	marere, to drop ...	

These examples will be sufficient to show that there is a great similarity not only in words which may have been floated in upon a language from outside sources, but also in the roots, particles, and words used in the different groups. Some of these, it will be seen, which are continually used in Papuan dialects are not found in Samoa, but appear again in groups still more remote from the present centre of the Papuan-speaking races, either expressing the same meaning, or some slightly different but analogous one. These root words and particles are a greater proof of the identity of different dialects than a much larger number of ordinary words of precisely similar form, or expressing the same shade of meaning.

Much stress has been laid upon the fact that no Polynesian language has any closed syllables. Every syllable must terminate with a vowel, and there can be no consonantal termination in any of its dialects. I myself attached great importance to this at one time; but I have ceased to do so for some time, for the simple reason that whilst some Papuan dialects in the Western Pacific are full of closed syllables there are others which are equally full of open ones, and are in fact almost as vocalic as any Eastern Polynesian dialect, though the grammatical construction of the language is still Papuan. I have also noticed a great tendency in some of the Polynesian peoples to eliminate or cut very short indeed the sound of the final vowel

in many words, and this I think is a survival of the closed sounds of the older Papuan. If then we can find a reasonable proof of the original identity of the languages in the similarity of the words and roots, and also in the grammatical construction of both, this fact of the open syllables of Polynesian dialects, as against the closed and open ones of the Papuan, will not I think present any serious difficulty.

By far the most serious difficulty has yet to be met; and this presents itself in the fact that the Papuan dialects are all distinguished by suffix formations, whilst the Polynesian is said to be distinguished by a preference for prefixes. But it may be questioned I think whether the Papuan is not almost as favourable as the Polynesian to prefixes; as also whether the Polynesian dialects of to-day, which are but slightly agglutinating, do not present many traces of suffix formations, which for some reason or other have in many instances been exchanged for prefixes. I am well aware that in the opinion of many this will be regarded as a mark of degeneracy which the present advanced state of the Polynesian, as compared with the Papuan, does not render probable, but the fact I think remains. The Papuan, which is the older tongue, is distinguished by suffix formations, the Polynesian, which is a later branch of it, has been affected by outside influences which, whilst enriching the language in some way, have weakened it by diminishing the number and power of its pronominal suffixes and transitive terminations. It will be impossible in the time at my disposal to give anything like a complete comparison of the two languages. A few words on each must suffice. The Polynesian (Samoan) has fourteen letters; the Papuan (Duke of York) has seventeen. In Samoan the article *le* is both definite and indefinite. And in the Duke of York, *a* is the same. *Se* in Samoan is always indefinite and so is *ta* in Duke of York. In both languages nouns are formed from verbs by the addition of terminal particles; in both the simple form of the verb may often be used as a noun, as to pray or a prayer. In both adjectives may be made into nouns by addition of the article, as lame, a lame man. In both gender is expressed by distinct names, or when the name is not sex-expressing, by adding the word male or female.

In both the singular number is expressed by its distinguishing adjective, the dual or trinal by numerals prefixed, and the plural is generally expressed by words expressive of quantity or number. In both, case is indicated by particles and prepositions. In the pronouns there appears to be at first a very great difference between the two, arising from the fact that in Papuan many nouns take a possessive pronominal suffix, whilst in Polynesian they only take the pronominal adjective before the

noun. Passing by for the present the last assertion, which I venture to think requires some modification, I will simply notice a few facts which, if fairly considered, will tend I think to show that there are survivals in Polynesian of these Papuan suffixes, and that the great fundamental distinction between those pronouns used to express a passive or intransitive relation, and those used to express an active or transitive action obtain in both languages, and may fairly be considered as additional evidence in favour of the theory of the common origin of both.

1. Some nouns in Papuan which take a suffix may also have the pronoun prefixed, *e.g.*, a *rumaig*, my house, or a *nug ruma*.

2. All that class of nouns which in Samoa take *o* and *lona* (implying a passive or intransitive relation), are the same class which in Papuan take the pronominal suffixes, whilst those which in Samoan take *a* and *lana* (implying an active and transitive relation), are those which in Papuan generally prefix the pronouns, evidently showing a generally underlying principle which is common to both of them.

3. The possessive termination in Samoa is undoubtedly a distinct word, as it is in the Duke of York; *loi*, more, is really *lo ou*, yams; *lou*, *lo ou*; *lona*, his—*lo na* or *lona*, as *lo matou*, ours, &c., and in *lona mata*, his eye, the *na* is precisely the same word which suffixed to *mata* in Duke of York makes *matana*, with the same meaning.

4. But in addition to this there are not wanting other traces or survivals of the suffixes in Eastern Polynesian, where some nouns and verbs take a suffix to the principal noun or verb, which is, I think, the same as in Papuan; *e.g.*, *tupu*, to grow, in Samoan, takes *ga* as a suffix, and forms *tupuga*, ancestors; and in Maori the same word takes *na*, and forms *tupuna*, ancestors. *Ng* and *n* are interchangeable consonants, and clearly here express the same meaning, and few will doubt their agreement with the pronoun suffix *na* in many Papuan words, *e.g.*, the Papuan *tapuna* or *tupuna* for grandfather. Many other examples might be given, which show that the suffix is retained in this form in the third person singular: but I do not at present remember any with the other numbers as in Papuan.

The formation of adjectives from nouns, the use of the simple form of the verb as an adjective, the prefixing of a particle signifying like, and the form of comparing adjectives are all alike in the two languages.

The numerals up to five are very much alike, and are in fact the same words, whilst the Duke of York has also separate words for the numbers up to ten, which are the same as in Polynesian, though they are only used in counting couples. Both peoples have a separate way of counting different articles.

Both make free use of distributives, and it must be especially noticed that both use the same form of calling eight ten less two, and nine ten less one.

Papuan is, undoubtedly, richer in transitive terminations than is the Eastern Polynesian; but a more careful study of many of the so-called particles of Eastern Polynesian dialects, will show that many of them are really the old transitive terminations. I am also inclined to believe that the Polynesian is richer in transitive terminations than is generally known, whilst the suffixes *taí* and *saí* (and *gai*?) in Samoan certainly change the action of the verb in precisely the same way that similar suffixes with the causative prefixed do in Papuan; e.g. *moetaí*, to run with a thing, is *wakalai* in Duke of York.

But I must conclude for the present this part of my subject by a quotation from the Introduction to my Grammar and Vocabulary. "The points of similarity between the two languages, as in the construction and formation of nouns and adjectives, the existence of the dual number in both, and traces of the trinal in the Eastern Polynesian, as in Tonga and Samoa, the use common to all of inclusive and exclusive pronouns, the reciprocal and causative forms of the verbs, the formation of the passive, the use of transitive terminations, and many other points are neither few nor insignificant as pointing to a common origin of both languages." I hope at some future time to show that the opinion here advanced is strengthened if not confirmed by a comparison of the manners and customs of the different peoples and especially by the survivals in culture amongst the later Polynesians of the customs and traditions of their Papuan ancestors.

The following paper was read by the Secretary :—

NOTES on SONGS and SONGMAKERS of some AUSTRALIAN TRIBES.

By A. W. HOWITT, F.G.S., Corr. Mem. Anth. Inst.

THE songs and dances of the Australian aborigines are usually spoken of by our own people as "*corroborees*," and this word is also even frequently applied to any of their social gatherings. This application is, however, not correct, for the songs, the song and dances, and the assemblies for social or other purposes have each their own distinctive name. The word "*corroboree*" has been adopted by the settlers from some tribal dialect in the early settled districts, probably of New South Wales, and has

been carried by them all over Australia. It may now even be regarded as an addition engrafted upon the English language.¹

The word "*corroborree*" probably meant originally both the song and the dance which accompanied it, as is the meaning of the word "*gūnyerū*" in the Kurnai languages.

In these notes I purpose to speak of some of the songs which I have become acquainted with belonging to the Woiworung tribe of the Yarra River, the Kurnai of Gippsland, and their eastern neighbours the Murring.

The songs are very numerous, and of varied character, and are connected with almost every part of the social life, for there is but little of the life of the Australian savage, either in peace or war, which is not in some measure connected with song.

Some songs are only used as dance music; some are descriptive of events which have struck the composer; some are comic or pathetic. There is also an extensive class of songs or chaunts connected with the practice of magic, and of these many are what may be called "incantations"—words of power chaunted in the belief that supernatural influence is not asked but compelled by them—influence for evil or for warding off evil.

Connected with this class are songs which are used at the Initiations, and which are therefore not known to the uninitiated or to the women.

A very large collection of songs might be made which would have much interest. For the present I must content myself with giving a few examples which I have gathered.

¹ It is curious to note how words are carried by the settlers from one part of Australia to another, and even by wild blacks who have visited their friends on the frontier settlement. By-and-by these words are thought by later comers to belong to the aboriginal dialect of the place where they are found in use, while the blacks look upon them as part of the white man's language. For instance, I found the word "*yaraman*," as meaning horse, used by the Cooper's Creek blacks before their country was settled. This word had travelled from the extreme south-east of New South Wales, where it has been supposed to be derived from the word "*yiramān*" = teeth, as referring to the large teeth of the horse. I am not satisfied with this explanation. At any rate the word had been carried to Cooper's Creek where the Yantrawunta used it—as well as the words "*come on wilfella*," to welcome us. In their own language they used the word "*kadli*" or "*kintala*," which means dog, for a horse, as they used the word "*warawati*," or emu, for a camel. At the stations which then formed the frontier, bordering the so-called Lake Torrens Basin, there was at each homestead a blackfellow whose business it was every morning to bring up the horses which ran loose in the unfenced country. This man was called "*nanto-shepherd*." The word *nanto* belongs to the language of the tribes about Adelaide, where it meant kangaroo, and had thence been carried onwards by the advancing settlers and their black boys, in its secondary and adapted meaning of horse. I have found such words in vocabularies compiled for me by correspondents, as for instance the word *lubra* = woman, which I think originally came from one of the Victorian tribes, if not from Tasmania, in a vocabulary from the Darling River, and which, on my questioning it, was corrected by my correspondent.

To English ears, unaccustomed to the simple and somewhat monotonous airs to which the words are set, there seems but little melody in these chaunts. But with custom they grow upon one, until at length one feels in some measure the effect which they produce upon an aboriginal audience in so powerful a manner.

There is a wild and pathetic music in some songs which I have heard chaunted by a number of voices together. I remember especially the air of the song of *Ngal-al-bal* as I heard it at the Murring Kuringal, and the song of the *Bat*, in which at early dawn the whole camp joined one by one in chorus, the words describing the bats "flitting about in the dim light which shows between the upper boughs of the tall trees."

The makers of the Australian songs, or of the combined songs and dances, are the poets or bards of the tribe and are held in great esteem. Their names are known to the neighbouring peoples, and their songs are carried from tribe to tribe, until the very meaning of the words is lost as well as the original source of the song.

It is hard to say how far and how long such songs may travel in the course of time over the Australian continent. I remember hearing one song first from one of the Narrinyeri of the Murray River, in South Australia. I last heard it among the Murring of Maneroo in New South Wales, and it was a favorite some forty years ago with the Gewagal tribe of the Hunter River, in the same colony. The distance between these extreme points is about five hundred miles in a direct line, but it by no means gives the length of the course followed by the song in its travels.

This song has two versions. The following is the one given to me by Mr. G. W. Rusden, who sang it from memory as he learned it from the Gewagal. Unfortunately I have no translation of the words:—

" *Mūla-mūlē tária-rara yannanga*
Ngūmberānga yē yandabá.

The second version is the one sung by one of the Murring, and runs thus:—

" *Mūla-mūlē Kūrūtba táriarará*
Gwialturá nangá ebermerangá."¹

The singer said that the words spoke of a platypus sitting on a rock in the river, and that the song came to his tribe from the Richmond River. Whether this statement is well-founded

¹ *Mūla-mūlē* = platypus, *Kūrūtba* = large rock, *táriarará* = bend of river.

I cannot say, but the man spoke with certainty and apparent candour.

With some songs there are pantomimic gestures or rhythmical movements, which are passed on from performer to performer, as the song is carried from tribe to tribe.

Such an instance is a song which was accompanied by a carved stick painted red which was held by the chief singer. This travelled down the Murray River from some unknown source.¹ The same song, accompanied by such a stick, also came into Gippsland many years ago from Melbourne, and may even have been the above-mentioned one on its return.

In the tribes with which I have acquaintance I find it a common belief that the songs, using that word in its widest meaning, as including all kinds of aboriginal poetry, are obtained by the bards from the spirits of the deceased, usually their relatives, during sleep in dreams. Thus the Biraark of the Kurnai professed to receive their poetic inspirations from the ghosts (*mrart*), as well as the dances which they were supposed to have first seen performed in ghostland. An interesting example of such an "inspired song" is found among the Woiworung. According to my informant, Berak, it was composed by the headman of that section of the Woiworung tribe which was located about Mount Macedon, and in the males of whose family, from one generation to the other,² was the custody of the quarry from which the surrounding tribes obtained the stone for their tomahawks. The bard who composed this song came of a poetic stock. His father and his father's father before him are said to have been "the makers of songs which made men sad or joyful when they heard them." The old man who sang this song to me was moved almost to tears by the melancholy which the words conveyed to him as he chaunted it.

One must be struck by the existence in an Australian tribe of a family of bards, the prototypes of the "sacred singers" of olden times. The song is a good instance of this class of compositions, and also a good example of the belief held by these "sacred singers" that they were inspired by something more than mortal when composing them. In this case it is "Bunjil" himself who "rushes down" into the heart of the singer.

The words of the song are as follows, and in the Appendix will be found another slightly different version. I am under very great obligations to the Rev. G. W. Torrance, M.A., Mus.D., for most kindly writing down the music from the lips of the singer

¹ The Rev. John Bulmer tells me that he saw this performance at the junction of the Darling and Murray Rivers.

² I might perhaps more properly say, successively from "paternal to filial group," for the brothers all participated in the custody of the quarry.

Berak, and for the most valuable remarks which he has made upon the songs given in the Appendix and on the singers' musical powers. To the Rev. Lorimer Fison, M.A., my valued fellow-worker in this part of the anthropological field, I am also greatly obliged for the trouble he has taken in bringing about the meeting between Dr. Torrance and the native bard, and for writing down with such care the words of the songs.

Wenberi's Song.

<i>Nge</i>	<i>tuigár</i>	<i>ngalá</i>	<i>ngibnba</i>	<i>ngalūgá</i>
We	go	all	(the) bones to	all of them
	<i>diindirāding</i>	<i>nga</i>	<i>Dūlūr</i>	<i>wīlūit.</i>
	shining white (in)	this	Dulur	country.
<i>Wa</i>	<i>Wéindūng</i>	<i>Būnjil</i>	<i>mameng-ngata</i>	<i>yenin</i>
The noise rushing	(of)	Bunjil	father ours	singing
	<i>thulūrmeik</i>	<i>nga</i>	<i>wārngalūk-eik.</i>	
(in)	breast mine	this	inside-mine.	

There are other poets who composed under what may be called natural influences as distinguished from supernatural. Umbara, the bard of the Coast Murring told me that his words came to him "not in sleep as to some men, but when tossing on the waves in his boat with the waters jumping up round him."¹ As an example of his songs, I give one which he composed when going down the coast in his boat to attend the initiation ceremonies which I have described in a previous paper.² He sang the song in the evening, sitting by his fire and beating the time with two short sticks, while an appreciative and admiring audience stood round.

Umbara's Song.

<i>Gálagala</i>	<i>binjá</i>	<i>bāningá</i>	<i>ngali</i>
Capsizing	me	striking	me
<i>winbelow</i> ³	<i>jená</i>	<i>ngárauan</i>	<i>ūdja</i>
(the) wind blows	hard	(the) sea	long stretched
<i>kándubai</i>	<i>bāningá</i>	<i>mēlinthi</i>	<i>bāningá</i>
between	striking	hard hitting	striking
<i>ngali</i>	<i>mūlari</i>	<i>binja</i>	<i>bāningá.</i>
me	dashing up	me	striking. ⁴

¹ He is a fisherman and owns a good Sydney-built boat, which he manages with the aid of his wife. In the olden times these "sea coast men" (*katungal*) used to go out a mile or more from the coast in their bark canoes to spear fish.

² "Australian Ceremonies of Initiation," "Journ. Anthropol. Inst.," May, 1884.

³ This is a curious instance of the manner in which English words are being engrafted on the aboriginal languages. "Winbelow" is really "the wind blows."

⁴ I am unable to say how it is that "binja" and "ngali" both mean "me" in the same grammatical construction.

This may be freely but yet not incorrectly translated much as Umbara himself explained it to me, "Between the furious wind and the dashing waves of the long stretched sea I was nearly upset."

I have mentioned songs which are accompanied by rhythmical gestures or by pantomime which greatly adds to the effect. A favorite one which I have seen describes the hunting of an opossum and its extraction from a hollow log by the hunter, who is the principal singer, and his assistants. Every action of finding the animal, the ineffectual attempt to poke it out of its retreat, the smoking it with a fire, and the killing of it by the hunters as it runs out, is rendered not only by the words of the song but also by the concerted actions and movements of the performers in their pantomimic dancing.

A very favorite song of this kind has travelled in late years from the Murring to the Kurnai. It was composed by one Mragūla, a noted song maker of the Wolgal, describing his attempt to cross the Snowy River in a leaky bark canoe during flood. The pantomimic action which accompanies this song is much fuller than the words, and is a graphic picture of the pushing off in the canoe, the paddling into the stream, the gaining of the leak, and after an ineffectual attempt to bale the water out by the hand, a hurried return to shore. Then the hole being carefully stopped with adhesive mud, the performers again push off and paddle across.

The words are in the Wolgal language, and therefore quite unintelligible to the Kurnai.

Mragūla's Song.

<i>Būrabūrai</i>	<i>biajānū</i>	<i>kāمبرneino</i>	<i>wūrgāiama</i>
Quickly	talking	mate his (to)	looking about
<i>ngilingūā</i>	<i>bārbūndu</i>	<i>malagūā</i>	<i>nāna.</i>
now	paddling	this side (to).	

Many other such songs could be given, but these will suffice to show their character. Nor is it necessary to do more than to point out that the comic songs all relate so far as I know to some passing event. A favorite song of this kind with the Murring is about "going to Melbourne in the steamer," and I have heard the Kurnai sing one inviting a friend to come to a "cool shady place with a bottle."

As connected with magic, or rather with the supernatural, the following song may serve as an example. It brings into view a curious belief in some connection supernaturally between beasts and man which is found in so many Australian beliefs and tales.

It was composed and sung by a bard named "Kurburu" who lived many years ago in the early days of the settlement of the country by the whites, near where the town of Berwick now stands, in the Western Port District. He was supposed to have killed a "native bear"¹ and being possessed by its spirit (*müräp*) thenceforth chaunted its song.

Kurburu's Song.

<i>Enagūrēa</i>	<i>nūng</i>	<i>ngalourma</i>
There	now	cut-a-cross
<i>barein</i>	<i>gūrūkba</i>	<i>mürnein</i>
track	blood	?
<i>būrūnbai</i>	<i>nganūngba</i>	
hurt	myself	
<i>lilira</i>	<i>mūringa.</i>	
chipped	tomahawk (with). ²	

The singer, Berak, gave me the following free translation, "You cut across my track, you spilled my blood, and broke your tomahawk on me."

Besides the men who were the bards of the tribe, there were also men of lesser poetic faculty, who devoted themselves to some branch of "art magic," and who used songs therein. The songs which they used were rather charms, chaunted by themselves alone, or with others who joined in the intention of producing some ill to another, or to alleviate or remove some ill done by another person. In many cases these chaunts are invocations of some supernatural being, as when the wizards call upon "Daramulun" at the Kuringal,³ or when the eponymous ancestors, Yeerung and Djeetgun, are called upon by the Kurnai at their Jeraeil.⁴

Such chaunts can scarcely be called songs, but they are part of the vocal efforts by which the aborigines seek to amuse, to benefit, to protect themselves, to injure their enemies, or to incline powerful supernatural beings to their good, or to the benefit and instruction of the young novices. I need not do more now than notice this as I have described these matters elsewhere, excepting in so far as to add another of the songs by which the Bunjil Yenjin⁵ of the Kurnai aided those in the olden times who

¹ *Phascogaleus cinereus*.

² I was not able to obtain a satisfactory verbatim translation of this song.

³ "Australian Ceremonies of Initiation," *Journ. Anthropol. Inst.*, May, 1884, p. 452.

⁴ "The Jeraeil, &c.," *Journ. Anthropol. Inst.*, May, 1885, p. 309.

⁵ As to the Bunjil Yenjin see a paper in *Journ. Anthropol. Inst.*, August, 1886, p. 409. The word "Yenjin" seems to mean "a song." See Winberri's song in which, in the Woiworung language, which is allied to the language of the Kurnai, "yenin" is to sing.

married by elopement. This Yenjin is in the Mükthang dialect of the Brabra Kurnai.

Yenjin Song.

<i>Kaiáka</i>	<i>jirai</i>	<i>yéndū</i>	<i>Yírŭng</i>	<i>malbretŭng</i>
Why cut	off	beard	Yeerung	long ago
<i>Djitgŭn-Djitgŭn</i>		<i>mŭna</i>		<i>betjŭrŭnga</i> ¹
Djeetgun		there		girl's sleeping place at.

The songs used by the doctors are merely spells chaunted over and over again, in fact "incantations" in the old sense of the word. Some of these chaunts are said to have been given to their possessors in dreams. Such an one I heard at the Kurnai Jeraeil when an old man endeavoured to cure his wife by it of some internal ailment. My attention was drawn to it by the extraordinary energy with which he was singing it, to a curious tune, ending with a complete explosion of the last word. He told me that it was a powerful charm which his "other father" (*breba-mungan* = father's brother) had taught him in a dream. I give it as possibly a valuable addition to the science of medicine.

A Charm.

<i>Minyan</i>	<i>bŭlŭn</i>	<i>ma naranke.</i>
Show or point with	belly	the moon to.

Finally, I may conclude these notes by saying that there are also "lullabys" and children's songs, of which the following will serve as samples:—

<i>Wa!</i>	<i>Wa!</i>	<i>Wa!</i>	<i>lelándū</i>	<i>mri ngŭ</i>
Stop!	stop!	stop!	sleep	eye thine.

The Woiworung had a somewhat more pretentious song, as to which my informant said that he "got it from his grandfather who got it from his parents, who got it from the old people, who got it from Bunjil."

<i>Bobŏpba</i>	<i>tháre thŭn</i>	<i>karéngre</i>
Baby	leg (from the knee down)	standing
<i>Bobŏpba</i>	<i>melba</i>	<i>ngŭrŭjeana.</i>
baby	lean in over	straight up.

When the children of the Wotjoballuk saw the new moon they sang as follows, in the belief that it would make them grow well:—

¹ *Betjŭrŭk* is the word applied to that part of the hut in which the unmarried daughter sleeps, that is to say, at her mother's back, and being thus next to the bough or bark shelter, her position gives opportunity for signalling to her from without by her youthful admirer.

<i>Waur</i>	<i>waur</i>	<i>waur</i>	<i>Galimba</i>	<i>jera</i>
Grow	grow	grow	Nursing	boughs
<i>mamoreik</i>	<i>Nürtang</i>	<i>ngouretch</i>		<i>bapüreik.</i>
father mine	Wearing	woman's kilt		mother mine.

It is to be regretted that more attention has not been paid to the songs of the Australian blackfellow. There is something to be learned from them as to the mental condition of the aborigines and their intellectual status. They throw light also upon their beliefs and upon their customs. No doubt there are among their songs, as among those of the civilised peoples also, some which are coarse or indecent. But these can be disregarded, unless by chance even they may prove to have some bearing upon custom or belief. As it is, the white man knows little or nothing of the blackfellows' songs. To most people they are unmeaning or barbarous chaunts, and to the missionaries, who have some more knowledge of them, they savour of heathendom, and must, therefore, be altogether pushed into oblivion and be forgotten. Thus, it is that before long all these songs, old and new, will be lost. As it is, a source of simple and innocent amusement is cut off from the aborigines by, no doubt, well meaning but very narrow minded men.

The following paper was read and illustrated vocally by the Assistant Secretary :—

MUSIC of the AUSTRALIAN ABORIGINALS.

By Rev. G. W. TORRANCE, M.A., Mus.D.

[*An Appendix to Mr. A. W. Howitt's "Notes on Songs and Songmakers of some Australian Tribes."*]

THE following brief description of the music of the Australian aborigines, with specimens of their songs from an authentic source, is offered as a contribution to Mr. Howitt's paper on "Songs and Song Makers." Being the result of but a single interview with a native bard, the particulars here noted are of necessity imperfect and superficial. Such as they are, however, it is hoped that they may prove of some little historic value, and lead to further inquiry into a subject which cannot fail to be one of interest to the anthropological student.

Generally speaking, the rude attempts at melody exhibited by these untaught natives may be described as a kind of nasal monotone, or chaunt, usually preceded by a downward progression somewhat resembling the "intonation" in Gregorian music. The songs are marked throughout by sudden, frequent

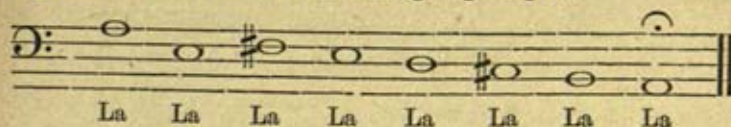
and ever varying inflections of voice, in compass rarely exceeding the distance of a third, and minor intervals predominating.

Much of the character of the music depends upon the rhythm which, while very strongly marked, is also most irregular, changing suddenly, and alternating frequently between duple and triple; the changes, moreover, being sometimes introduced by a slackening of the time, and a curious sliding of one sound into another, not unlike the slow tuning of a violin string.

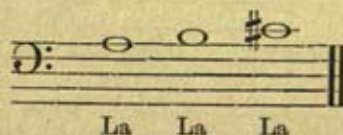
In the "Corroboree" the rhythmic measures are emphasized by clapping of hands and stamping of feet. When one singer or set of singers is exhausted, others in turn take up and continue the chaunt *ad lib.*, till the wild dance is concluded.

The native bard alluded to above (William Berak, from whom the illustrations were obtained), is an intelligent representative of his race. His voice is a baritone of average compass and not unpleasing quality. His ear also is fairly quick and accurate, though occasionally he would pause long as if trying to recall the test sounds before repeating them; and his patience, good temper, and evident pleasure at seeing his songs committed to paper, were very remarkable.

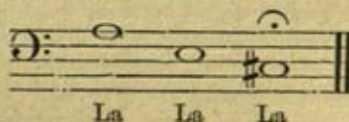
In order to ascertain the compass of this aboriginal's voice, and his power of retaining and expressing some distinct musical idea, a simple solfeggio passage was sung to him. After a brief silence, and without attempting to repeat the given sounds, he began slowly and deliberately, and with much emphasis on each note, the following impromptu:—



As an ear test, he then repeated accurately, pausing first as before:—



an effort which the bard voluntarily supplemented by:—



evidently much pleased with his own performance, and the applause of his auditors.

The appended native songs, jotted down as nearly as possible in modern notation, will help to illustrate the foregoing observations. The bard was in each case allowed to choose his own starting note, and generally pitched on, or about, D in the bass.

KURBURU'S SONG.

Sounded as if in the Key of B minor.

Tempo Moderato. M ♩ = 100.

ê . . . na gur - é - a nung ngalúrma báreng

rit *tempo*
gúr - uk ba mirnin mirnin nga búrun bángan bóðha¹

te - lére mûringá : é yam yam mûðhan gûrn bai wirge ngû - rák.

¹ German ð ; dh = sound of "th" in "this."

The above was repeated several times, without break or pause, omitting the "intonation" at each repetition, and ending abruptly at the double bar.

WENERI'S SONG.

No particular key suggested. Pitched first on D \sharp then changed abruptly to C \sharp , D \sharp , and B.

Tempo Moderato. M. $\text{♩} = 100$.

The musical score consists of three staves. The first staff begins with a treble clef, a key signature of one sharp (F#), and a 3/4 time signature. It contains the lyrics: *rit.* *tempo* *rit.* *tempo*. The second staff continues the melody with the lyrics: *rit.* *tempo* *rit.* *tempo*. The third staff concludes the piece with the lyrics: *rit.* *tempo* *rit.* *tempo*.

¹ *ü* = ny. ² The "t" in "wurtin" apparently inserted or omitted at pleasure (N.B.—ei = "ai" in "rain.") ³ dh = sound of "th" in "this." ⁴ Mueik = mweik. So also *gueik*.

This song was repeated on B, a third lower, and sung through to the same sound.

CORROBOREE SONG.

Sung on D, with nasal "intonation" preceding, and no change of note till repetition.

M. $\text{♩} = 100.$

rit.
tempo

ē ngā wájáíáya bún - - d é a g'ennunwíl

ngā burdángalá yélengéa gónowára

ngā wá g e l á i y a bún - - d é a, &c.

Repeated a tone lower without intonation.

This drone or chaunt is repeated *ad lib.* as long as the ceremony lasts, a tone lower each time, and accompanied throughout with clapping of hands and stamping of feet.

DISCUSSION.

Mr. BLOXAM said that it would be observed that each of these melodies was restricted within the limits of a tetrachord, resembling in this respect some of the ancient Egyptian melodies still existing in Ethiopia; he ventured to give two or three

examples of these melodies in which, although the range was so limited, there was a considerable amount of swing and vigour, much more, indeed, than was to be found in the Australian songs, which consisted, as Dr. Torrance had pointed out, almost entirely of a nasal monotone. It was interesting to observe the intonation at the commencement of each song; which, together with the limited extent of notes, may be observed in the Temple melodies of some of the most ancient civilised nations, and conduces to the expression of solemnity and grandeur, as well as mystery. The plain song of the Church, which was originally confined within a pentachord, is characterised by the intonation, and is still, in the tones used for the psalms, simply accentuated recitative of a somewhat similar character to the Australian songs; it is, moreover, of very great antiquity, and most likely inherited from the Temple worship of the Hebrews, who may themselves have derived it from the ancient Egyptians. It is probable that the earliest musical efforts of savages are directed to the imitation of natural sounds such as the warbling of birds, and the rippling of a brook, and some of the ancient Ethiopian melodies to which he had just called attention fully bore out this view. Mr. Bloxam also gave an example of the tune of a Chinese hymn in praise of the dead, which does not go beyond the five tones of the old Chinese scale; these sacred hymns have been transmitted unaltered from time immemorial, and the Chinese trace the commencement of the decadence of their musical system to the time when their five-toned scale was enlarged to seven tones. It is worthy of remark also that these Australian songs were accompanied by clapping of hands and stamping of feet, a custom still practised by the natives of Morocco and Tunis, especially by the Jewish maidens, and which is so often represented on the oldest Egyptian monuments. This method of marking the rhythmical measure of songs is very widespread, being used not only by the people already mentioned but also, amongst others, by the Nautch girls of India and by the Zulus of South Africa.

Mr. BERTIN also joined in the discussion.

A few particulars concerning the ABORIGINES of WESTERN AUSTRALIA in the early history of that Colony.

By R. H. BLAND, Esq.

I LEFT England in May, 1829, and arrived in Western Australia in August of that year. After settling for a short time a few miles from Perth, the capital, I was appointed by Sir James Stirling, the Governor, to settle the York District, about 70 miles inland, and was shortly afterwards appointed resident magistrate of that district, one of my principal duties

being to look after the aborigines and protect the settlers. This brought me a good deal in contact with the natives, and induced me to ascertain their ideas upon various matters and to devise the best means of keeping on friendly terms with them, thus saving life on both sides. I ascertained that they had a firm belief in a future state of existence, but their ideas on the subject were very indistinct. They fully believed, however, that unless they were buried shortly after death there would be no future state for them, and consequently they had a great dread of their bodies being unburied and left to the wild dogs and birds to prey upon. Two special instances I now give.

Shortly after the York District was settled I received an intimation late one evening that the wife and child of a shepherd had been killed by the blacks. I went to the place the next morning, and found that the woman had been speared and the child killed, and the bodies thrown into the hut, which had been set on fire, presenting a horrible sight. I reported the case to the Governor, Mr. Hutt, who ordered me out with a party, and I, of course, determined not to shoot any but the real murderers, but these I was not likely to fall in with.

I represented to the Governor that it would be best to endeavour to apprehend the men, commit them for trial, and carry out the sentence whatever it was, and Mr. Hutt agreed to this. I secured the services of a respectably connected young man who for a time had been living with the blacks and was acquainted with their habits and language, on condition that if he brought to me two of the three blacks for whose apprehension I had issued warrants, he should be appointed Superintendent of Police for the district. After fitting him out with a gun and provisions for himself and two friendly blacks, he succeeded in capturing two out of the three offenders, named Barrabong and Yughite. I sent them down to Perth for trial, when they were found guilty and sentenced to be hung in chains on the spot where the murder was committed. The sentence was at once carried out, and had the effect of stopping all further murders by the blacks during the remainder of the time I had charge of that district, the cause, I fully believe, being the dread of this method of punishment, and the horror of being left unburied. As a further proof of this belief, I state the following case of a young man who, when out with his tribe, met some blacks of another tribe who commenced fighting. A spear struck the young man in the leg below the knee which split the tibia; suppuration set in and the lower part of the leg came off. The bones and sinews hanging down presenting a sad sight, he was taken to the hospital at Perth to have his leg amputated. The surgeon told him he would not

ANTHROPOLOGICAL MISCELLANEA.

The Legend of NARCISSUS.

It was an old Greek and Indian maxim *not to look at one's reflection in water* (Mullach's "Fragm. Philos. Græc.," I, p. 510; "Laws of Manu," iv, 38). The same maxim, with an explanation, is found among Zulus and Melanesians. Thus in Bishop Callaway's "Nursery Tales, Traditions, and Histories of the Zulus," I, p. 342, we read: "It is said there is a beast in the water which can seize the shadow of a man; when he looks into the water it takes his shadow; the man no longer wishes to turn back, but has a great wish to enter the pool; it seems to him that there is not death in the water; it is as if he was going to real happiness where there is no harm; and he dies through going into the pool, being eaten by the beast, which was not seen at first, but is seen when it catches hold of him; and so it is said, 'Forsooth it has taken his shadow; he no longer sees; his eyes are dark; he no longer sees anything; it is that which causes him to be as he is.' This is the tale which I hear people tell. And men are forbidden to lean over and look into a dark pool, it being feared lest their shadow should be taken away." Similarly of the Melanesians we are told that "there is a stream in Saddle Island, or rather a pool in a stream into which if anyone looks he dies; the malignant spirit takes hold upon his life by means of his reflection on the water" (Journ. Anthropol. Inst., X, p. 313). In view of these facts we cannot doubt that the classical Greek story of Narcissus who saw his reflection in water and pined and died in consequence, is to be similarly explained; his reflection (i.e. his soul) was dragged under water by the water-spirits, leaving him soulless to die. The belief must have been Indo-European, as it is found both in Greece and India. It lingers, in a faded form, in the English superstition that any one who sees a water-fairy must pine and die.

"Alas, the moon should ever beam
To show what man should never see!—
I saw a maiden on a stream,
And fair was she!

"I staid to watch, a little space,
Her parted lips if she would sing;
The waters closed above her face
With many a ring.

"I know my life will fade away,
I know that I must vainly pine,
For I am made of mortal clay,
But she's divine!"

The story of Hylas who, going to fetch water, was drawn under by the nymphs is probably to be explained in the same way.

J. G. FRAZER.



KAPUÍ NAGAS.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

JANUARY 11TH, 1887.

FRANCIS GALTON, Esq., M.A., F.R.S., *President, in the Chair.*

The Minutes of the last ordinary meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

- From the AUTHOR.—Notes on the Waganda Tribe of Central Africa. By Robert W. Felkin, M.D.
- Der Mensch. By Dr. Johannes Ranke.
- From the BERLIN GESELLSCHAFT FÜR ANTHROPOLOGIE, ETHNOLOGIE, UND URGESCHICHTE.—Zeitschrift für Ethnologie, 1886. Heft 5.
- From the BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.—Notulen van de Algemeene en Bestuursvergaderingen. Deel xxiv. Aflevering 3.
- Tijdschrift voor Indische Taal-, Land- en Volkenkunde. Deel xxxi. Aflevering 4.
- Catalogus der Numismatische Verzameling. Derde Druk.
- From the ACADEMY.—Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg. Tome xxxi. No. 3.
- Atti della Reale Accademia dei Lincei. Serie Quarta. Vol. II. Fas. 10.
- From the ASSOCIATION.—Journal of the Royal Historical and Archaeological Association of Ireland. January. 1886. No. 65.
- From the SOCIETY.—Proceedings of the Royal Society. No. 247.
- Proceedings of the Royal Geographical Society. 1887. Jan.
- Journal of the Society of Arts. Nos. 1778-1781.

- From the SOCIETY.—Proceedings and Transactions of the Royal Society of Canada for the year 1885. Vol. III.
 — Transactions of the Asiatic Society of Japan. Vol. XIV. 2.
 — Journal of the China Branch of the Royal Asiatic Society for the year 1884. Vol. XIX. Part 2.
 — Bulletin de la Société de Borda, Dax. 1886. Part 4.
 — Bulletin de la Société Neuchateloise de Géographie. Tome II. Fas. 2.
 — Mittheilungen des Vereins für Erdkunde zu Leipzig, 1885.
 — Mittheilungen der Anthropologischen Gesellschaft in Wien. XVI Band. Heft 1, 2.
 — Bulletin de la Société Impériale des Naturalistes de Moscou. 1886. No. 2.
 From the EDITOR.—Journal of Mental Science. No. 104.
 — Nature. Nos. 894-897.
 — Photographic Times. Nos. 273-275.
 — Science. Nos. 200-203.
 — L'Homme. 1886. Nos. 19-20.

The PRESIDENT announced that the Annual General Meeting of the Institute would be held on Tuesday, January 25th, and nominated Mr. G. M. Atkinson and Mr. E. W. Brabrook to act as Auditors.

The following paper was read by the author and illustrated by the exhibition of a large collection of objects of ethnological interest:—

The ABORIGINAL TRIBES of MANIPUR.

By Dr. GEORGE WATT, M.B., C.M., F.L.S., C.I.E.

[With PLATES V and VI.]

HAVING spent the greater part of a year in Manipur, in connection with the recent boundary expedition, I took some pains to preserve a diary of my sojournings among the wild tribes of that country. When asked by your President, Mr. Francis Galton, to read a paper before the Anthropological Institute, I was, I now find, a little too hasty in selecting the subject I have the honour to lay before you this evening. The Journal of your Institute already possesses some most valuable papers on the primitive people who inhabit the charming mountainous country which separates Assam from Burma. Colonel R. G. Woodthorpe in two most admirable papers has placed before you a detailed account of the Angami Nagas, and of the other wild tribes who inhabit the so-called Naga Hills. These are the northern neighbours of the hill tribes of Manipur, and

are indeed so intimately related to one or two of the Manipur tribes that they can with difficulty be separated from them. A most valuable series of papers has also appeared in your *Journal* on the monolithic monuments of the Naga Hills and of the Khasia Hills, from the pens of Colonel H. H. Godwin-Austin and Mr. C. B. Clarke. A charmingly written paper, which will ever remain a memorial of the noble-minded officer whose name it bears—the late most unfortunate Captain J. Butler—gives a life-like picture of the Angamis. This appeared in the *Journal* of the Asiatic Society of Bengal in the year 1875. Several other brief notices of the Nagas, and of their mountainous country, have also appeared, but of Manipur proper only two pamphlets have been published, and these are, I regret to say, not readily procurable in London. I allude to Colonel McCulloch's and Dr. Brown's official reports of Manipur. These two officers were for many years the political agents in that State, and took great pains (more particularly the former) to collect trustworthy facts regarding the people amongst whom their lives were thrown. My distinguished friend, Colonel (now Sir James) Johnstone, K.C.S.I., who for many years acted as political agent, in his reports also added greatly to our knowledge of the people of Manipur, and I may be pardoned if I add that to Sir James' friendship I owe entirely the opportunity of being permitted to visit some of the more distant and therefore more interesting races met with in that country.

I have deemed it desirable to give this brief history of the papers which have appeared on Manipur, since I hope to lay before you to-night the facts contained in my diary only which I deem new, or which I think have not obtained sufficient publicity; but I may here explain that I have consulted very carefully, and often borrowed largely, from the works enumerated above, so as to make my present paper as nearly as possible a complete though brief abstract of all that is at present known regarding the interesting region to which I desire to call your attention. It may, however, be as well to give in this place a general account of the geographical position of Manipur, and to indicate its main physical peculiarities. There are perhaps over twenty different races of human beings met with in that small region, and it would seem that the nature of the country itself has exercised a considerable influence in the isolation and formation of the separate and antagonistic races within an area of only about 8,000 square miles.

It may in popular language be stated that from the Bay of Bengal near Chittagong, a closely packed belt of mountains rises from the plains of Bengal, Cachar, and Assam, on the one side, and from Burma on the other. This wall extends

through the so-called Chittagong Hill tracts to Manipur, and onwards to the north-east to the so-called Naga Hills, and terminates with the Patkoi Mountains at a point where that range is joined on to the Bhutan Himalaya. Manipur is thus the middle portion of this highland country, and is traversed by a perfectly bewildering series of more or less parallel ranges which are every now and then knotted together by transverse spurs in proximity to the culminating points. These lofty knots exercise a most important influence. They cause the rivers which have been flowing south-west for miles to return down the other side of the same range only to escape round a second range, and to thus resume their south-westerly direction. Within these valleys, and with their villages perched on commanding spurs, the various tribes seem also to have wandered, and the lofty knots appear not only to have determined the drainage, but also to have influenced the diffusion of the people. To the north and north-west of Manipur, one of the most important ranges (the Barail), culminates in Japvo—a peak over 10,000 feet in altitude. From this elevated mass transverse spurs connect the neighbouring parallel ranges. These links not only determine the watershed of the rivers which are to traverse the valleys of Manipur from those one might be almost pardoned for viewing as the northern extensions of the same valleys into the Naga country, but along these very transverse spurs may be traced the line which demarcates the Nagas of the north from the Nagas of Manipur. So again similar though less important instances occur of the connecting spurs forming the limitations of the races who have come to live within the aggregation of parallel valleys or on the enclosing mountains which go to make up the little state of Manipur.

One of the most striking features of Manipur is the pleasing way in which the mountains, at intervals, widen apart so as to enclose the fertile plains formed by the rivers. The valley of Manipur proper is the largest and most valuable plain of this nature, but many other smaller ones burst upon the view of the traveller, each appearing like an oasis, hung from the confusion of wild and rugged mountains. It is perhaps safe to assume that the superiority of land of this kind over that laboriously formed by terracing the slopes of the hills, must have been the reward ever kept in view by tribes rising into importance and power. The conquest of one race over another most probably led to the valleys passing time after time into new hands. That this idea may be the correct one receives countenance from the fact that many of the hill tribes have traditions that they once held the great valley of Manipur. Modern history fully supports this also, for, in perhaps no

other part of India, have greater or more cruel struggles taken place, than amongst the tribes of Manipur. Each great period in the history of that little state has seen one tribe a terror to all the others, owing to its young men being entirely devoted to raiding on the villages of the neighbouring tribes. During these unprovoked attacks and marauding expeditions the villages were completely destroyed, the old and weak men and women murdered, the strong and young men and women carried into slavery, and the infants cruelly butchered before their parents' eyes. This wholesale capturing of slaves must in time have exercised a powerful influence in modifying tribal characteristics, for the slaves were often well cared for, the younger ones being allowed to take wives, or were given in marriage to their captors. All this has happily been changed, and the raiding habit, through the strong hand of the British power, has been almost entirely put down.

The last great race of invaders and conquerors who entered Manipur was the Kukies or Lushais. These people seem to have taken their origin in the upper Chittagong Hill tracts, but finding it necessary to immigrate, the surplus population, during the past two or three centuries at least, has kept moving to the north, or in other words into Manipur. One wave of these invaders received the name of the Khongjai Kukies, another the Kom Kukies, and these two in their numerous clans or subdivisions seem to have poured into Manipur territory, and wandering up the mountains which constitute the western wall of the valley, ultimately descended into the valley itself. A third great wave, the Suktis or Kumhaus, now inhabit the country immediately to the south of the valley of Manipur or have wandered along a portion of the eastern ranges. A fourth, the Chasáds (or Chuksáds), a branch of the Suktis, have attracted attention within the past few years. These modern raiding Kukies seem to have come from Burma into Manipur, and most probably at the instigation of the Rajah of Sumjok, a Burmese feudatory chief. It was Chasád raidings that led to the Burma-Manipur expedition, since, while occupying territory claimed by Manipur they acknowledged allegiance only to Sumjok.

A fifth great branch of this same family, the Lushais, has not only been pressing on the Kukies from behind and raiding upon them, but their attacks on the British district of Cachar led to the Lushai war. It may thus be observed the Kukies and Lushais close in the southern extremity of Manipur, and it is perhaps safe to assert that these southern tribes, broken into their respective clans, are two branches of the same great family. They speak dialects of a common tongue and are very

similar both in appearance, dress, and social customs. Their influence in Manipur has been great, especially on the races who now inhabit at least the southern half of that State. Indeed the Manipuris proper, or the ruling people who inhabit the fertile plains of Manipur, speak a language acknowledged to belong to the Lushai group. By the casual observer the so-called Manipuris (or as they call themselves Meithis) would be pronounced a mixed race between the Kukies and the Nagas. Indeed, this is most probably the true definition of that people, and it may safely be said that it is difficult to limit the influence of Kukie blood in a very large number of the tribes of Manipur. Commencing with the Kumhaus in the south and passing north through Manipur, race after race is seen to blend into each other so that the neighbouring peoples can scarcely be distinguished. If, on the other hand, two clans at a greater distance from each other be compared they are found to be perfectly distinct. It is perhaps not far from the truth to assume that the present inhabitants of the plains and hills of Manipur have sprung from four great influences: the Kukies in the south, the Nagas in the north, the Shan and Burmese tribes on the east, and certain hill tribes on the west more or less related to the great Kachari family now distributed throughout the Valley of Assam. Starting with this assumption, on going north the people are found to become more and more of the accepted Naga type just as on passing south they become more and more Lushai, while on wandering to the east a Shan and Burmese taint appears, and on passing west tribes more and more allied to the hillmen of the Northern Cachar hills and to the people of the Khasia and Garo hills are found. The southern half of the eastern people—the Murrings, and, in the Kaho Valley, the Kubaús—are more Burmese, or rather Shan, than anything else; while the northern section lose their Naga type and come to bear a stronger affinity to some of the wild hill tribes of Burma. Sarameti is the loftiest peak of the mountain region we are considering. It rises to close upon 13,000 feet and it may be stated to be north-east of Manipur or very nearly due east of Khomia, the capital of the Naga Hills. To the west of this lofty peak occur the powerful Angami Nagas; to the south and south-west the great family of the Tankhul Nagas of Manipur. But on nearing Sarameti both the Angami and Tankhul types change, and a distinct Burmese influence makes itself felt. Some of the more important branches of the wild tribes of the Naga Hills described by Colonel Woodthorpe in his second paper (read before this Institute), inhabit the regions lying east and north-east of the Angamis, or in other words, in proximity to Sarameti. The people to whom I more particularly desire to draw your atten-

tion in this paper are those to the south and south-west (the opposite side) of Sarameti, in other words, to the Tankhul and allied Naga tribes.

Having now in a general way indicated the characteristic features of Manipur and of its people, I shall proceed to examine in greater detail some of the typical races; but in so doing I shall endeavour to be brief, and to follow as closely as possible the narrative of my own personal travels amongst these people.

The road from Cachar to Manipur passes over nine nearly parallel ranges, and these constitute the western wall of the valley. This road is carried by giddy cane suspension bridges across the deep and blue rivers which flow between the hills. These bridges are in many respects unlike the platted bark bridges of the Himalaya, being stronger and more durable. A long cane, (the scandant stem of the palm, *Calamus Rotang*), three or four hundred feet long is carefully selected and drawn across the river. This, stretched at each end over a natural rock, or masonry or a wooden pillar, constructed for the purpose, is fastened by beams driven into the ground beyond the pillars. A second or even a third cane is similarly stretched across, and the belt formed by these canes is thereafter platted into a pathway of about a foot in breadth. The pillars are then carried to a farther height of six feet, and two other strong canes are carried across from the top of the pillars and about three feet apart; these are fastened by more distant beams into the ground. A small doorway is left in the upper portions of the pillars leading to the pathway. By means of a carefully selected set of canes cut so as to leave at one extremity a V-shaped stump of a branch, the upper suspension canes are bound to the pathway by the V-shaped end being hooked on to one of the upper canes and carried below the pathway and tied to the opposite upper cane. The next one is hooked on to the opposite cane, then carried under the pathway and tied to the other suspension. In this way the suspension canes are securely bound throughout the entire length of the bridge to the pathway, and while with the weight of the passenger the bridge curves and sways to an alarming degree it is impossible to fall off the tunnel-like structure through which the traveller has to pass. Some of these bridges providing for the great rise in the rivers, during the rains, are carried as much as 50 feet above the ordinary level of the water, and, while a giddy sensation is caused by the water being seen to flow beneath the feet—a sensation as if running violently up the stream sideways—still, at all seasons of the year the rivers of Manipur may be crossed in safety.

To illustrate more forcibly the deep gorges which cut up the

mountainous tracts of Manipur, it may be here added that on the road from Cachar to Manipur the following large rivers are crossed:—the Jiri, the Makru, the Barak, the Irang, the Lengba, and the Limatak, in a journey of only about 80 miles. So deep are the gorges in which these rivers flow to the south, that in most of them the sun sets on the river some hours before its golden tints have faded away from the forest-clad summits of the hills which cast their gloomy shadows on the deep and still waters. Nothing could more forcibly depict the configuration of Manipur than a history of its rivers and their contortions before they are permitted to escape to the plains below. The Barak, the largest and most important river of the country, for example, rises north-east of the Makru and Irang rivers, and flowing S.W., then N.E., and turning W.N.W. it resumes again its S.W. course, thus sweeping round the head streams of the Irang and Makru. Again flowing south-east, it receives in its course in addition to the Makru several small streams; next the Irang; still pursuing a southerly course it receives the Tepai, which flows north from the Lushai country to join it, at this point it now makes a sharp bend and flows nearly due north until it receives the waters of the Jiri, after which it enters British territory, and flows west through Cachar. This is a brief history of the river system within the western wall of Manipur, a wall in which the Barail constitutes the most lofty range. An illustration of this kind shows how closely the mountain tracts of Manipur are packed with parallel ranges of hills and deep gorges.

The wall which forms the western side of Manipur—the wall of which I shall presently speak—is inhabited by:

1st. A tribe of Nagas broken into various more or less distinct clans, which all speak dialects of the same language, although these are often so different that they have to resort to Manipuri when conversing with each other. I allude to the inhabitants of the western ranges, to the north of the road from Cachar to Manipur; these may collectively be called the Kaupuis.

2nd. The Khongjai and Kom Kukies to the south of the Government road.

I do not propose to describe to you to-night the various races of Kukies and Lushais, for these are but comparatively modern invaders of Manipur. The Kaupuis, on the other hand, are perhaps one of the oldest races, but from being much more peaceable they have attracted less attention; they are accordingly very interesting from an anthropological point of view.

The Kaupuis.

There are said to be three great clans of Kaupuis, namely: 1st. Sungbu; 2nd. Koiveng; and 3rd. Kaupuis proper. The number of this tribe has been estimated at about 5,000 persons. They would appear to have occupied their present position from great antiquity, having been only compelled to resign positions they formerly held, through the persecution of the Kukies. They are much devoted to their village sites, not so much because they were born there, but because their ancestors rest in the village cemeteries. The Sungbu branch of the tribe is the strongest and most powerful.

Characteristics.—They are of moderate stature, sometimes very short, well-formed, but generally not very muscular. Some of them have good looks, but the greatest differences in countenance are often met with. Some have Mongolian faces, others are almost Aryan, with oblique eyes. This is, however a feature of most of the tribes of Manipur; oblique eyes, without the flat noses and high cheek bones of the typical Mongolian, being common. The hair is worn short amongst the males, sticking straight up from the head, and cut to within an inch and a half of the scalp. Others wear the hair long, and cut straight round, divided in the middle and kept back by means of a thin strip of bamboo (*see* Plate V).

The dress of the males is scanty, the working dress consisting of only a small, square, apron-like piece of cloth, suspended in front. The more fashionable costume is, however, a kilt-like piece of cloth bound round the waist, and hanging down in front. The lower portion of this cloth is often elegantly embroidered, and has red tassels and tufts of yellow orchid bark forming a neat fringe. The shawl thrown over the shoulders is generally white, with an elegant red border, the narrow stripes of which it is composed having, where these are joined together, red triangular embroidered ornaments. The women wear a piece of cotton cloth of a thick texture. This is generally blue with red stripes and quaint embroidered designs. It is fastened under the armpits so as to cover the breasts, and hangs down to the knees. A waist band, with the characteristic yellow and red fringe, serves as an additional means of fastening up this skirt. In the cold season the women also wear a sort of short jacket, which seems to have been borrowed from the Manipuris. Over the shoulders is also thrown a blue scarf-like piece of cloth with an elegant fringe.

The men wear in the left ear a bunch of brass earrings, with generally nothing in the right. The female earrings are often like those worn by the Garo women, large, numerous and heavy.

Necklaces of beads and shells, but more particularly of reddish pebbles, are much prized. On the upper arm a bracelet is worn. This consists of a wire as thick as a quill, wound tightly ten or twelve times round the arm, both ends being flattened out into a head piece about the size of a shilling, and tapering backwards into the wire. Above the calf of the leg numerous rings of cane dyed black, or of the black fibres of *Caryota urens* are worn. The articles of jewellery prized by the women are similar to those of the men, only larger and more numerous; the legs and feet are, however, left bare.

The Villages.—The villages are built on the commanding spurs of the hills, and are protected by a wooden palisade. The houses are strongly built and admirably thatched. The front gable is large and often ornamented by rudely carved horns projecting above, in which are fastened bunches of epiphytic orchids. The roof slopes backward, so that the further gable is often very small. Each household preserves its grains and other valuables in a strongly-built granary. As a proof of the respect which they show for individual property it may be mentioned, however, that these store-houses are bolted on the outside, for they know nothing of locks and keys, and, indeed, have no need of either, since the habit of stealing from each other is quite unheard of amongst these simple people. A partition divides each house into two compartments. In the front compartment the family sits, and in the rear apartment they sleep and cook their meals. The boys of the family from the time they reach maturity sleep with all the other young men of the village in what may be called the guard house. The women do all the heavy work, and the men, when not employed in agricultural labour, sit all day long near the house door, smoking pipes with bamboo water bowls. They use green tobacco, but admit that the pleasure of smoking is not to be compared with that of holding in the mouth a sip of the nicotised fluid from the water bowl of the pipe.

Every village has its hereditary officers, namely, the Kul-lakpa, the Lul-laka, and the Lampu. The hereditary chief is a man of influence according as he is wealthy or has a high personal reputation for sport or deeds of daring. Usually, however, this is not the case, and each village is a sort of miniature republic, the safety of which all acknowledge to depend upon the strict observance of the natural laws of personal rights and property. Without laws or law-givers, without even an elective governing body, they live in peace and happiness, the head men sitting in council only when a crime has been committed. The highest punishment that such a council can inflict is expulsion from the village, for blood feuds are left to be avenged by those who

are implicated in them. The certainty of vengeance makes such rare within a village, but blood feuds between two villages are never forgotten and are handed down long after the cause of such feuds has been entirely forgotten.

Marriage System.—Intercourse between the youths of both sexes is perfectly unrestricted and attachments between individuals repeatedly spring up, but if such attachments are not approved by the parents they are broken off, and the young man's father goes to the home of the girl of *his* selection to treat for a daughter-in-law. These parental forced marriages never seem to give origin to any unhappiness afterwards, although young couples often do run away and get married against their parents' wishes. Such matches create for a time much indignation, but they are not regarded as sufficiently serious to necessitate the flight of the parties. The young couple merely take refuge in a friend's house who looks after them until a compromise has been come to by the parents. In the case of adultery the woman escapes without punishment, and should the adulterer be killed by the offended and injured husband the wife returns to her father's house.

One of the most extraordinary peculiarities of the Kaupuis is that of taking "bone money" (*Munda*). On the death of a wife her father demands *munda* from the husband, or if he be dead, the late husband's nearest relative. On the death of a child *munda* is also demanded by the wife's father. The *munda* generally consists of a buffalo, and the demander of *munda* has to kill a pig for the family feast. No *munda* is required for a person killed accidentally or in war, or by cholera or small-pox. Should a woman die in childbirth the child is not permitted to live but is buried with her. If the husband dies before the wife she is taken by his brother or nearest male kin. This curious system of bone money may be viewed as securing the protection of individuals under whatever circumstances they may be thrown, and the *munda* ensures that every care will be taken both of wife and offspring.

Polygamy is permitted but is rare. Divorce occurs if all parties concerned are agreeable, but the wife can only separate provided her parents return the marriage purchase-money.

Burial Customs.—On the death of a Kaupui a feast is given by the survivors to their family and friends. The corpse is buried on the day of the death in a coffin, and under the body and within the coffin are placed a hoe, a spear, cooking pots, and cloths, for use in the next world. The grave consists of a deep trench with an opening or recess excavated at right angles to the trench; in the recess the coffin is deposited and the earth filled in. A large flat slab is placed over the mouth of the

trench. In the graves of females are buried the wearing cloths spinning-wheels, and cooking implements. While the Kaupuis thus bury their dead somewhat after the way the ashes of the Khasias are deposited in graves over which large slabs are placed, they do not erect the memorial monoliths so common in the Khasia and Naga Hills.

Implements.—A short spear not ornamented; wicker-work shields ornamented with painted figures and dyed hair. These shields are of great length and slightly curved. The *dáo* is of the ordinary curved Bengal pattern, and is worn stuck in the waist cloth either at the side or more commonly behind. The Kaupuis are great experts in throwing the spear.

Religious Ideas.—The Kaupuis believe in a supreme being who is benevolent. This deity is creator of all things. They have an obscure idea of a future state. In addition to numerous spirits they recognise the existence of one who is especially employed in inducing men to do evil. After death they say that men go to an underground world where they are met by their ancestors who introduce them to this new life. It is remarkable that not only does this same idea prevail throughout all the various Naga races of Manipur, but most of these aboriginal tribes believe also that they came into this world by escaping from a cave which many say was in the country to the south, others to the east of their present abode. A murdered man meets his murderer in the next world, and makes him his slave. Each village generally has a priest who directs the sacrifices. He is held in sacred esteem, and is not allowed to do any work, but his office is not hereditary. Before going on a journey or commencing any important work, the priest is consulted as to a propitious day, and on these occasions eggs are frequently consulted. A simple method of divining omens consists in rapidly scratching the ground with the finger or a piece of bamboo, and thereafter counting the number of lines made: an even number is unlucky. Meeting a mole on the road is very unlucky, and the Kaupuis accordingly try to secure and kill this objectionable creature. The barking of a deer in front is also a bad omen.

The Kolyas.

Having now briefly indicated a few of the more striking peculiarities of the Kaupuis, I shall endeavour to direct your attention to the people met with during a journey to the north from the town of Manipur to the British possession now known as the Naga Hills. The path leads up the valley of the Tiki River (the river called Imphal in Manipur) for a distance of about three days' journey, until it reaches the watershed near

the village of Sangopung, and not far from the Manipur police station of Myang Khong. Still to the north, it follows down the Khomaru to the outpost of Karong. Here the Barak is seen to make one of its remarkable reversions. The river from Meithiphum flows south-west to form with the Khomaru the Karong head stream of the Barak. From the plateau-like spur of Karong, however, the Barak flows north-east in a somewhat confined valley so that its banks are little more than two or three miles distant from the Meithiphum, the two valleys being almost quite parallel for a distance of eight or ten miles. Thus the path from Manipur to the north follows up one stream and down another but it also skirts along the eastern flank of the Barail range of rugged and bold peaks. To the west and north-west of this portion of the Barail, the mountainous country is broken by the deep and almost precipitous valleys of the Makru, Irang, and Barak. The head streams of these rivers drain their waters from the great transverse range which forms the watershed of the rivers which flow south through Manipur and ultimately to Cachar from those which find their way to the north through the Naga Hills to Assam. To the south of the transverse range and within the upper drainage area of the Barak (the region I have tried briefly to indicate), reside the various clans of the tribe of Nagas whom the late Dr. Brown was, I think, the first to designate collectively, as the Kolyas. On the journey from Manipur to Kohima the visitor has thus the opportunity of studying one or two of the more important clans of this tribe of Nagas, and it may be repeated that they occur on the west and north-west of Manipur between the Kaupuis and the Angamis, but it may be added that they extend east of the line of the Tiki until they meet the great tribe of Tankhul Nagas. Intermediate in geographical position the Kolyas may be said to resemble the Kaupuis in the south, to blend into the Angamis on the north, to approximate to the Tankhuls on the east, and to gradually become more and more like the Kachcha Nagas on the north and north-west. Isolated, however, within their respective wild mountain homes the various clans of Kolyas have come to possess peculiarities in dress, social habits, and language which render it no difficult task to assign to each man his proper clan, if not to fix the very village to which he belongs. They have little or no dealings with each other, but on the contrary exist in what one might be almost pardoned for describing as a chronic and hereditary state of feud one with the other.

There are said to be eight clans of Kolya Nagas named Tangal, Mao, Murram, Pural, Threngba, Meithiphum, Myang-Khong, and Tokpo-khúl. These clans have been returned as about

5,000 souls each clan occupying from one to at most ten or twelve villages. Their customs differ but slightly from those of the Kaupuis, but in language, dress, and facial peculiarities they are much more nearly related to the Angamis. Indeed the Mao and Murram clans claim to have descended from the Angamis (or as they are here called the Gnamis) and the Angamis themselves tell an amusing story of *their* history which tends to give credibility to the Kolya tradition. There was a lake, they say, out of which emerged three men: one went south and gave origin to the Mao and Murram clans, another west, the great ancestor of the Kachcha Nagas, and the third remained in the country and became the Angami. Colonel R. G. Woodthorpe has divided the Nagas of the Naga Hills and the country to the north of the Angamis into kilted and non-kilted Nagas. The Kaupuis and many of the Kolyas are non-kilted and wear a figleaf-like apron suspended from a waist string, or don a sort of tightly bound *dhoti* which covers the back as well as the front of the body. The *dhoti* worn by the Mao and Murram Kolyas, however, very much resembles the Angami Naga black kilt, only that the ornamental shells on it never (as was formerly the case amongst the Angamis) denoted a warrior who had captured so many human heads. The Kolyas as a race are, however, far inferior to the Angamis or even to the Kaupuis in matters of personal adornment. The Mao and Murram Nagas rarely wear any other garment beside their black kilt, and only occasionally do they possess ornaments or jewellery. The ears are however perforated by persons who desire to wear earrings during the winter months, and coloured cotton thread, red and blue, is worked into ear pendants eight inches long. The upper ends of these pendants are formed into a sort of long ring which projects in front, the ends dangling from behind the ear. Amongst both the Maos and Murrans the young men never sleep in their parents' houses but live in a club or watch-house, and in this house in the case of the Murrans, the younger married men are also to be found. This fact would seem to point to a state of constant preparedness against the approach of an enemy. The young unmarried girls however, are never (as amongst the Angamis) found living promiscuously with the young men. Marriage is preserved with the utmost rigidity, adultery being punished by the death of the male offender, and by the woman having her hair cut off, her nose slit open, and, deprived of her jewellery and personal property, by being returned to her parents. Divorce is, however, easily procurable; the consent of both parties being obtained, the property is divided and the woman is thus once more free to marry whom she pleases. Although, as amongst the Kaupuis and the Angamis, the young parties are consulted

and their likings as a rule followed, marriage is contracted by the parents. The father of the boy or girl who wishes to get a daughter or son-in-law goes to the pre-arranged family with a present, and if this be accepted, marriage arrangements are rapidly completed and feasts given to all the friends and relatives. The rule usual amongst all Nagas, is with the Kolyas strictly observed, of marriage never being permitted within the same family.

Theft is extremely prevalent and is practically viewed as a crime only when detected, but even then the punishment inflicted is simple, namely the compulsory return of the stolen property. To charge a man with stealing without being able to prove the theft might, however, mean a blood-feud. This looseness in the respect for personal property contrasts most forcibly with that which has been narrated regarding the Kaupuis where even the granaries are bolted only on the outside, and still theft is quite unknown.

The whole of the Mao tribe is under one chief who receives tribute in the form of one basket of rice a year from each family, and exercises the usual authority possessed by all monarchs or rajahs. There are twelve villages of Maos, each comprising on an average about one hundred houses. In this respect the Maos are very unlike the Kaupuis, where each village has its nominal hereditary chief, who is, however, powerless, the village being a miniature republic, and they are equally unlike the Angamis, where every village is broken into two or more *khels*, each under its respective head man. Combination is thus possible amongst the Maos, but impossible with the Angamis, since nearly every *khel* has a feud against at least one other *khel* in one or more villages. The Mao houses are like the Kaupui and Angami houses, gable-ended, but the walls are much higher than those to be seen in the Kaupui villages.

The Murrams are contained within one large village of nearly 1,000 houses. They have two hereditary chiefs, the greater and the lesser chief. Colonel W. J. McCulloch gives an amusing description of the tradition prevalent to account for this remarkable fact. "A former chief had two sons, of whom the younger, who was the greater warrior, desired to usurp the place of his elder brother. He urged his father to give him the chiefship. The old chief, afraid of his younger son, and unable to give up the birthright of the eldest, determined on a stratagem. He told his eldest son to go and secretly bring home the head of an enemy. This having been done, the old chief summoned his sons, and giving each a packet of provisions, desired them to proceed in such directions as they chose in search of enemies, for he who brought in first the head of an enemy should be king.

The brothers took their leave, the youngest proceeding where he thought he would soonest procure a head, the eldest bending his steps to where he had concealed the one already taken. This he brought out of its concealment, and proceeded with it in triumph through the village. Nor was the youngest long in returning with a head, but having been preceded by his brother, the chiefship was declared to be the right of the eldest. This, however, did not satisfy the youngest son: he persisted in being called chief, and the matter was compromised, by both being allowed to remain, one as the great the other as the little chief; neither of them has any fixed revenue. But the village, when it is necessary, makes the great chief's house, and they give him the hind leg of all game caught; the little chief has no right to anything, the houses in his vicinity, however, do at times give him a leg of game. Formerly no one was allowed to plant his rice until the great chief allowed it, or had finished his planting. This mark of superiority is not at present allowed by the little chief, who plants without reference to his superior. There are many prohibitions in regard to the food, both animal and vegetable, which the chief should eat, and the Murrams say the chief's post must be a very uncomfortable one."

The Murram houses are just the reverse to the Kaupui houses. In sickness, offerings are made to the deities, and a feast is occasionally given to the poor, but the priests and priestesses, who officiate on all such occasions, are not held in high esteem: the people, for example, never impoverish themselves, as the Kaupuis do, to merit the praises of their priests.

On the journey from Manipur to Kohima, the Murrams would not be visited, as their country lies considerably to the east of the path followed, being between that of the Maos and the Lahupas. The principal village of the Maos, however, forms the frontier of Manipur territory, bordering with the Angamis of the Naga Hills. I have discussed the Maos and Murrams first, because they are more numerous and more powerful than any of the other Kolyas. In passing, however, from Manipur to Kohima the Myang Khong clan is first visited, and then the Meithiphums, before reaching the Maos. The Myang Khongs possess nine villages, and each village has its nominal chief, but in village government, as in many other respects, the Myang Khongs resemble the Kaupuis far more than their northern neighbours the Murrams. The village of Tangal, which stands on a hill to the east of the lovely plain of Keithimabi, enjoys the high reputation of having been the birthplace of the founder of the present Manipur dynasty. But the Tangals differ so little from the Myang Khongs and Meithiphum clans that they need scarcely be more than mentioned by name. On

the crest of the hill above Myang Khong, the visitor is first made acquainted with the commemorative monoliths erected by the Kolyas, in honour of great feasts given on historic events. These are often nine or ten feet high, and occur as a rule in rows along some prominent and commanding ridge leading from the village. They do not, however, appear to be arranged according to any definite plan, either as to height or number. Sometimes a great stone will be found standing all by itself, with a cairn of pebbles gathered around it: at other times two, three, or it may be twenty or thirty occur over the crest of the hill or along the path leading to the village. At a distance, these remind one of the slate slabs which, in the far north of Scotland, stand in rows around the fields or enclose the roads which are there in many places carried, like water ruts, below the level of the fields. The habit of raising commemorative stones forcibly isolates the Kolyas from the Kaupuis, and allies them to the Angamis, but I could not discover any instance where these monoliths marked the tombs of great men, as is the case with many of the monoliths in the Khasia hills and among the Angami Nagas.

After passing the frontier of Manipur near the village of Mao, the visitor finds in a very short time that he has entered the country of a new and more cheerful people, for the contrast between the Nagas of Manipur and the Angamis is extremely great. Instead of the untidy race, neglectful of all personal appearance, among whom he has sojourned for some days, he finds himself among a bold, warlike mountain race, who are as proud of their personal appearance as of their wild mountains and laboriously terraced hillsides.

The Angamis.

It is not my present purpose to dwell at any length on these people.¹ They have been so fully discussed by Colonel Woodthorpe and Captain Butler that little is now left to be told regarding them. The *Khel* system by which their villages are split into rival communities does not however appear to have been fully understood. Instead of the sub-clans occupying different districts they are dispersed throughout the country, each village consisting of two or more of these sub-clans or *Khels*. It is no unusual state of affairs to find *Khel* A of one village at war with *Khel* B of another, while not at war with *Khel* B of its own village. The *Khels* are often completely separated by great walls, the people on either side

¹ For representations of the Angami Nagas, see plates accompanying Col. Woodthorpe's paper in "Journ. Anthropol. Inst.," Vol. XI, pp. 56, 196.

living within a few yards of each other, yet having no dealings whatever. Each *Khel* has its own head man, but little respect is paid to the chief; each *Khel* may be described as a small republic. The club system for the youths of the village prevails, each *Khel* having its own club-house or *dosta-khâna*, in which not merely the young men, but also the young women all live together instead of with their parents. It has been stated by some of the writers on the Naga Hills that the young men in the Angami villages do not live together, as is the case with most of the Naga tribes. This mistake appears to have arisen from the fact that the men, not of the whole village, but of each *Khel* within the village do so, and indeed the men in the club or watch-house belonging to one *Khel* have often to keep as close a guard against those of another *Khel* as against the approach of an enemy outside the common fortifications of the village. While scrambling over the walls dividing the *Khels* of Kegwima I was not a little surprised when I came across a stone 5 feet long and 3 feet 6 inches broad, covered with cup-shaped markings. There were at least thirty-one such markings all apparently very old, most being coated with lichens. Some of the better markings were 2 inches in diameter and $1\frac{1}{2}$ inches deep. These on inquiry of the bystanders were at first said to be "nothing at all," then by-and-by an explanation was offered. Their fathers when they were children made these holes by imitating the grown-up people husking the rice in the large wooden mortars. When cross-examined as to how this game of childhood had disappeared they could give no answer. From one village to another I wandered with my eyes opened to see a new fact, which, whatever explanation may be given if it exists, namely, that numerous stones built here and there, now in the village fortifications and now in the commemorative piles, are freely covered with artificial markings closely resembling those found in many parts of Europe. A few of the more striking of such stones were photographed. I venture to give no theory regarding these markings, and I have called them by the name by which they are known in Europe, "cup-shaped markings," because they are identical in size and form with those which my friend Mr. J. Linn, of the Geological Survey, took me over the North of Scotland to examine. Still less do I propose that there is anything more than a coincidence in the fact that they are in many cases associated, although apparently unconnected, with the habit of erecting great monoliths, such as are also to be found near some of the cup-shaped markings of Scotland. In one or two instances I discovered monoliths, each with one deep cup-shaped marking on its apex, and I could get no explanation of this fact. The Angamis are, however, believers

in evil spirits, and pile up great masses of leaves in the forest foot-paths dedicated to the spirits that dwell there. It is by no means uncommon to find near these heaps a pole stuck in the ground with a globular ball cut on its apex, and even a small hole drilled on the top. Poles of this kind I came across once or twice while wandering through the more inaccessible forests of Manipur, and I recollect to have seen a most remarkable accumulation of this nature in native Sikkim. Two or three poles, spear-like, were stuck in the ground, and across the path was drawn a string with feathers and broken eggs attached to it. Strings, said to be for the spirits of dying men to cross by, are regularly carried over the rivers by the Santals of Bengal, and cairns of stones, with sticks and bits of red-coloured cloth occur on every difficult mountain pass throughout India. It is worth adding that it is an universal custom that all cairns of stones or of leaves dedicated to the spirits that reside there are passed by the traveller on his right, be he the bold Angami Naga, the miserable looking Tankhul of Manipur, or the happy Leptcha of Sikkim.

Music is practically unknown amongst the Angamis, and their only song is the monotonous grunting of the *hau-hau* in different tones, indulged in and kept up by every man engaged on any kind of work. A song with words I believe to be unknown, and with the exception of the cow-bells and bamboo reed-whistles, they have no musical instruments—except one, by-the-by, which I do not recollect to have seen described, a bamboo Jews' harp used both by the Angamis and the Khasias.

Among the Angamis omens are generally consulted by rapidly cutting the woody stems of *Adhatoda vesica* into thin slices and watching in how many cases the dark heart-shaped pith falls directed towards or away from the operator. The Angami is an expert cultivator so far as his primitive agricultural implements admit of his being so. He has most marvellously terraced the slopes around his villages, cleverly carrying from a great distance by ingeniously constructed channels the water necessary for the irrigation of his crops. Rice is the principal crop, but Indian corn is now largely cultivated along with several species of beans and peas. De Candolle, in his most admirable little book on the cultivated plants of the world excludes the soy-bean (the seeds of *Glycine Soja*) from being Indian on the ground mainly of its having no vernacular names. It not only has a name in every vernacular in India, but it is largely grown by the Angamis, a people who have only taken from India the Indian corn and tobacco, and the Angami name for it, *T'zo-dza*, looks remarkably like *Soya*. It may be worth adding that while buckwheat and

amarantus grains, extensively cultivated by nearly all the hill tribes of India, are apparently unknown to the Angamis, they cultivate in their place a labiate plant, *Perilla ocimoides*, known to them as *kenia*. To the Manipuris, the Kolya Nagas, and the Angamis the wild madder, *Rubia sikkimensis*, is far more valuable than the equally abundant manjet, *Rubia cordifolia*. Few people can live long among the Angamis and not admire the beautiful scarlet-coloured human and goats' hair with which they ornament their spears, earrings, and other ornaments. The power to dye human hair is doubtfully known to the European dyer, still less can he stain the siliceous layer of the rattan cane. Both these arts are fully understood by the Nagas, but they declare that if manjet be used instead of *Rubia sikkimensis* the result will not be obtained. This curious fact appears to be quite unknown to the hill tribes of other parts of India who alone use the manjet and pronounce the more extensive climber, *R. sikkimensis*, as quite worthless. To obtain the red dye from the latter plant the bark of the *Alnus nepalensis* is employed along with a handful of the seeds of *Perilla ocimoides*, and a little of the bark of *Symplocos racemosa*. The blue colour used by the Angamis is derived from *Strobilanthes flaccidifolius*, the *rûm* plant of all the hill tribes of Assam, and not from the common indigo plant. This fact is even still more curious since *rûm* is the indigo-yielding plant used in the adjoining provinces of China.

This apparent digression has been made to explain the red and blue colours used by the Angamis, for their blue drapery and red hair ornaments are their most striking peculiarities of apparel.

The Murring Nagas.

Having now dwelt in some considerable detail with the people who inhabit the western and northern mountain tracts of Manipur, I must hasten to say something of the more primitive although none the less interesting people found on the eastern side. In a general sort of way it has already been explained that far to the south abutting on the Khongjai Kukis the Murring Nagas inhabit the Hirok mountains. These are a very Burmese-looking people who tie the hair in a knot and allow it to rest almost on the temples. In stature they are medium-sized. They wear a white sheet striped, or with only a coloured border. This is folded across the waist and tucked in at the side. Over the upper part of the body is thrown loosely a checked shawl. In the ears are worn small rings.

While in many respects these people closely resemble the



TANKHUL NAGAS.

Burmans, in religion and social customs they more nearly approach the Kaupuis, but like the Kolyas they love feasts and erect a commemorative pile of stones after each great occasion.

The Tankhul Nagas.

From the Hirok mountains north until they are met by the Murrans and Angamis and certain Burmese hill tribes, said to reside on the east and south-east of Sarameti, occur the Tankhul Nagas. These have been divided into two sections, the more timid and wretched Tankhuls to the south, who, like the Murrings and Kukies, use a bow and arrow, and to the north the stalwart Lahupa Nagas, who have held their own alike against the Angamis and the Burmans mainly from the reputation they enjoy of being from their greater stature able to wield a much longer spear than any other tribe on the Assam frontier. The Manipuris call these people Lahupas from the basket-like helmets which they wear. The Tankhuls in the south are a diminutive race who wear the hair long behind and on the sides, but cut across the crown like the unmarried girls of Manipur. The Lahupas on the other hand cut off all the hair except a band across the head from the brow to the neck about two inches in breadth, in which the hair is left about an inch and a-half high, and so trained as to stand on end. This gives them a wild expression which their more stately form greatly enhances. (See Plate VI.)

The Tankhuls and Lahupas are said to number about 20,000; they regard themselves as consisting of many sub-divisions but for the most part these are but the distinctions into villages and districts, for with the exception of the southern and northern tribes the others do not deserve separate notice. They are a tall race with large heads and heavy, stolid features, but still not unlike the lively Angamis with their small faces, small eyes, and high cheek bones. Their dress is often very scanty, especially that of the men, consisting in holiday attire of a piece of cloth folded around the waist with a portion hanging down in front. Over the upper part of the body they throw loosely a large white shawl with stripes of red composed of little patches, in a somewhat checkered pattern. But while working all these garments are rejected, and they are then seen to possess but one article of dress, a horn or ivory ring about an eighth to a quarter of an inch in breadth drawn over the person. Dr. Brown says, "the object of this custom, which is of great antiquity, is to prevent an *erectio penis*, they holding apparently that a mere exposure of the person unless so attended is not a matter to be ashamed of." This ring is assumed on reaching puberty and is worn until death. Among the poor people a

blade of grass is made to serve the same purpose as the ring. Numerous explanations of this remarkable practice have been offered but as yet without any satisfactory result. Dr. Brown seemed to think that it had some relation to the strange habit of the eldest son, on marriage, turning his parents out of their home and claiming two-thirds of all they possess. But surely if this habit proved irksome, rather than to retard the period when marriage would be desired, it would have been a simpler solution of the difficulty to alter the inhuman conception of the selfish rights of a first-born son.

On the birth of a child fowls are sacrificed and the women only of the village are treated to liquor. The child soon after birth has chewed rice placed in its mouth and is immersed in water nearly boiling from a supposed idea to make the child hardy. The mother is also made to perspire freely by being wrapped in hot water blankets until faintness ensues; on the third day the woman is allowed to go about and to resume her usual occupation.

Of the personal ornaments worn by the Tankhul little need be said. The ears are always perforated, the opening being greatly dilated at first by means of a V-shaped piece of cane, and afterwards by a W-shaped piece. The process of perforating the ears is, however, expensive, as a feast has to be given; it is accordingly customary to delay until a good number can be operated on at once. When properly formed the ear is ornamented with a miniature bale of white cotton wool at least two or three inches in diameter. At other times six or eight pieces of *solah* pith are placed together within the ear. Metal ornaments are never worn. The armlets consist of a piece of light wood about three inches in diameter hollowed out so as to admit the arm, and reduced until the ring of wood is not more than a quarter of an inch in thickness. The outer surface of this armlet is then ornamented with red-coloured cane, covered over with the yellow bark of an orchid so as to leave exposed two rows of diamond-shaped spaces surrounded by the yellow.

Whether on the death of a great personage or on the perforation of the ears, notice is given of the feast by the construction of a great basket-work triangle of bamboo supported on two feet. This frame-work is variously decorated, and it is so constructed that all persons seeing it can learn the day the feast has been arranged for. While passing the village of Khongui I had the pleasure to witness a ceremony to the great god Kanchin-Kurah praying that rain might come. This consisted of rice flour kneaded into dough and cut into round, biscuit-like pieces and fried. Eleven pieces were prepared for each family, six for the husband and five for the wife. Sitting upon

a conspicuous spot each couple was devoutly engaged eating a little dog's flesh and breaking the biscuits. At each mouthful a fragment was thrown to the unseen, while his sacred name was repeated. Although no Naga will drink milk they all enjoy dog's flesh immensely, and will eat eggs only when quite rotten and liquid. They say that once upon a time they were cannibals, and they point to a distant hill saying the people beyond it are cannibals to this day. While not eating human flesh, they will eat anything except horseflesh. Elephant, after being dead for some time and half putrid, is much relished.

The names for the various hereditary chiefs and headmen in the Tankhul villages are the same as those which prevail with the Kaupuis, and indeed their religious ideas are also closely similar. They do not erect monoliths like the Kolyas and Angamis, but outside their villages they construct curious memorial tombs in commemoration of their great men. These consist of great platforms about 20 feet long, and perhaps three feet in height. They are three feet broad at the end nearest the village, and become about six feet broad at the further end. They are paved all over with slabs, and in time become most convenient resting-places. When recently constructed, however, they bear at the further end five wooden pillars curiously carved, three in front and two behind, upon which are placed the skulls and horns of the animals offered at the great feast. The two shorter pillars are each bifid at the top. The Tankhuls bury their dead.

In conversation with the Tankhuls, I learned that once upon a time their villages were just as with the Angamis, broken into *khels*, but that long ago this system was abandoned.

The Lahupa agriculture is much more primitive than that practised by the Angamis. Carts and ploughs are of course absolutely unknown in any part of Manipur territory. The Tankhul hoe is, however, only a small blade of about two inches in diameter, lashed on to a bent stick. By this means the surface is very indifferently scratched, and the wonder is that he succeeds in getting crops of any kind to grow. One curiously clever agricultural implement, however, I saw in use near Khongui. This was an implement to free the ground of weeds. It consisted of a hoop of iron about half-an-inch in breadth, the diameter of the hoop being about one foot. To each end of the hoop a handle was attached, and the implement was so held in the hand that when dashed on the soft soil it passed completely underground, cutting off the roots of all the weeds. This I regard as a much more expeditious weeder than any hoe I have ever seen in Europe. As far as the Manipur tribes are concerned, I saw it only amongst the Tankhuls. In addition to rice, the Tankhul cultivates Job's

tears (*Coix lachryma*) as an article of food, a plant which by the Santals of Bengal and the hill tribes of most other parts of India is regarded as a most objectionable weed, and neither fit for human nor for animal food.

The Manipuris.

Having now briefly enumerated the leading hill tribes of Manipur, it would naturally conclude any such account to say something of the Manipuris themselves. This could not be done satisfactorily, however, in the space which I have at command, and I shall therefore conclude by saying that both in language and facial peculiarities the Manipuris would appear to be a mixed race between the Kukis and Nagas, and most probably the Kolya Nagas.

Explanation of Plates V and VI.

Plate V. Group of Kaupui Nagas.

„ VI. Group of Tankhul Nagas (Northern Lahupa tribe).

Both these plates are taken from photographs by Dr. Brown.

DISCUSSION.

Captain R. C. TEMPLE, with reference to the author's remarks on the cane bridges of the Nágas, pointed out the analogous rope bridges of Kashmir, called the *jhólá* and *chíká*. The *jhólá* bridge consists of a footway composed of a hawser of loosely woven ropes with another rope about three feet above it as a handrail. The *chíká* consists similarly of a hawser from which is swung a large wooden ring in which the passenger is seated, and which is hauled across the stream by a second rope. Captain Temple also pointed out that like the Nágas the inhabitants of Sikkim and Népal dwelt on hill tops and high plateaux, so as to be out of the way of malaria, while their cultivation was often carried on at much lower levels.

As regards the ground plan of a Nága house, broad in front and narrow at the back, it is curiously the very form that is so "unlucky" in the West of India that no native will live in one of such a shape. In the Punjab it is called *shérdahán*, and Captain Temple having about seven years ago to induce certain people to settle in a portion of a Punjabi town, found it impossible to do so as the shape of the required spot was *shérdahán* (lion-mouthed).

The Karens of Burma, who are related to the Angami Nágas, north of Manipur, and to the allied tribes of Khyens and Kakhyens of Burma, have a system of external justice which would account for the perpetual blood feuds alluded to by Dr. Watt, the origin of which is unknown to the tribes themselves. A Karen may revenge a wrong done by an outsider on any member of his race or family—e.g., an English planter had a dispute with some

Karens of Henzadá about the price of some land, and then left Burma. Afterwards his son came to the spot from England to settle, having had no connection with the old dispute. He was murdered as being a member of the planter's family, according to the Karen notions of proper justice. Of course, such a notion would tend to perpetuate blood-feuds for ever. The Karens, too, like the Nágas, have a personal god, but not apparently an evil spirit. This god, however, having deserted them, is not worshipped; but the spirits inherent in every living thing, and indeed in all the more prominent inanimate things, who have power to harm men are worshipped, because they are active, and the god inactive. There is thus a very interesting practical pantheism within a mystical monotheism.

As regards cup marks, Captain Temple pointed out that both in India and in Scotland instances were on record of boys and fishermen (in the latter country) adding to the cup-marks on stones to the present day, and making fresh ones. This should make us cautious about accepting the theories as to the antiquity of some of these marks.

As to the use of the words *Khel* for clan and section of a village, and *dóstakhána* for the common hall or house of a village; these are words of Persian and Parthian origin from western India, used in the same senses. This was curious and worth investigation. Analogous words are *Káji* (= *Qází*) and *Díván*, used all over the Himalayas as titles for the ordinary officials of the native states: though the Muhammadans were never in Népál, Sikkim, or Bhútán, they are directly borrowed from them.

Dr. Watt had remarked that the Nágas will eat any living thing, so will the Karens, excepting, however, the monkey. It would, therefore, be very interesting to know if the Nágas excepted any one animal from their category of food producers. (Dr. Watt here remarked that they excepted the horse.) Captain Temple thereon said that this information was important as it pointed to a possible totemism now or in days gone by.

Lastly, as to *polo*—a game which had been mentioned by Dr. Watt. This was a game equally well known to the Baltis and Ladákhis of the north-west Himalaya, and was, Captain Temple understood, very like the form adopted by the Manipuris.

Lieut.-Col. H. H. GODWIN-AUSTEN said that it had been a great pleasure to him to be present to hear Dr. Watt give an account of the hill tribes around Manipur. It is a pleasure seldom accorded in this country to meet those who are familiar with a distant country which one knows well; and having been employed for a long period in those hills the speaker could testify to the accuracy of what Dr. Watt had told them that evening. He regretted that the map by which the paper, when read, was illustrated, was on too small a scale to convey an accurate idea of the very extraordinary parallelism of the mountain ridges between Cachar and Manipur, and the manner in which the rivers break through it, and show the plain portion of that country. Dr. Watt

had, the speaker thought, put the elevation of the main range too high at 13,000 feet. Its mean height is said to be 6-7,000, for only a few points reach a higher altitude.

Colonel Godwin-Austen took the opportunity now that they were discussing the tribes of the Manipur Hills, to allude to an officer who knew more of them and their language colloquially than any man now living—viz., the late Colonel McCulloch, who was resident at Manipur for over twenty years. To him the Kuki tribes now living on the south of the valley and all around owe their very existence; but for him they would have all passed into slavery. When these tribes were driven north by the Lushais, Colonel McCulloch found them lands in the hills around Manipur. Colonel Godwin-Austen said that on their becoming aware that he was an intimate friend of Colonel McCulloch, they gave him every assistance that lay in their power. The old men asked after him, and they called him still their father: it was one of those many examples which show how some English officers make themselves beloved by the natives of the country.

Sir JOSEPH FAYREER also made some remarks, and the Author briefly replied, correcting the mistake as to the altitude of the mountains.

The EGYPTIAN CLASSIFICATION of the RACES of MAN.

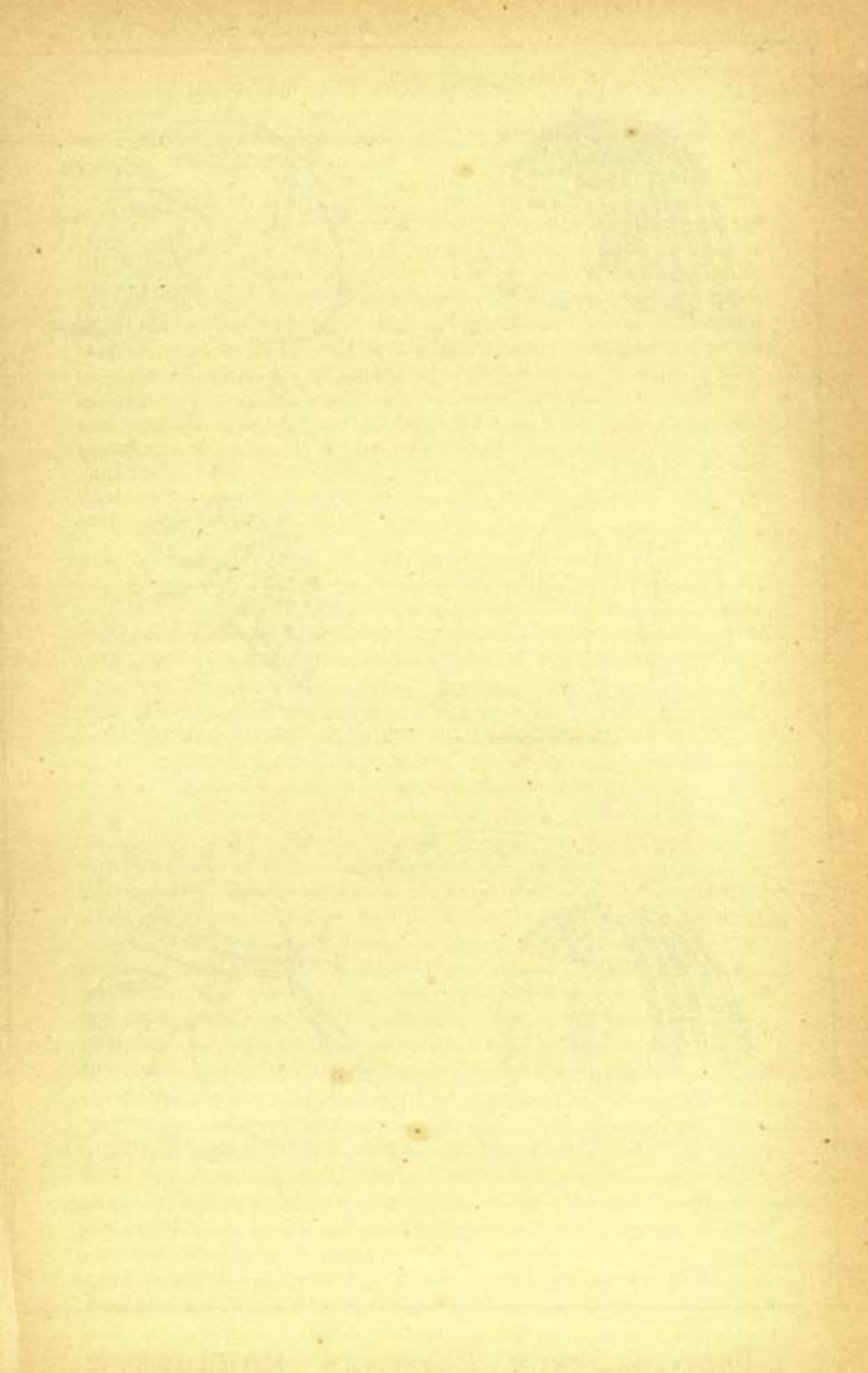
By REGINALD STUART POOLE, Esq., LL.D.

[WITH PLATES VII AND VIII.]

[An address given before the Anthropological Institute on May 25, 1886.]

I SHALL attempt to state in a short space as much as may be considered certain as to the Egyptian classification of the races of man.

The Egyptian information on this subject is extremely valuable as it takes one back at least three thousand years, while the evidence of other nations is very slight. In the Roman evidence, the latest, there is very little of value, if we except such subjects as the reliefs of Trajan's column, and these, from the inferiority of their art, lack due weight. The Greeks present many precious memorials of the races with whom they came in contact, in the portraits of the kings or leading men, but we must remember that the type of the mass of a people can hardly be represented by these personages, whose type must have been raised by their intermarriages with the most beautiful women of their time, not necessarily of their own race; and we have also to take into consideration the sense of beauty which pervaded all the Greeks did, and their leaning towards elimination, the necessary corollary





PROFILES FROM EGYPTIAN MONUMENTS.

of measure and form, which caused them, even when making a portrait, to reject, when possible, anything which appeared to them ungraceful, or jarred on their sense of beauty; so we can get little direct evidence from them except the heads of the Bactrian kings on their coins, and some of those of the kings of Bosphorus. In the Assyrian and cognate representations where we might have expected to find abundant evidence we are somewhat at a loss. The Assyrians themselves are shown to have been of a very pure type of Semites, but in the Babylonians there is a sign of Cushite blood, so slight, however, that we should probably pass it over unperceived, unless we knew it was to be looked for. There is one portrait of an Elamite (Cushite) king on a vase found at Susa; he is painted black and thus belongs to the Cushite race. The Ethiopian type can be clearly seen in the reliefs depicting the Assyrian wars with the kings of Ethiopia, but it is hard to discriminate Arabs or Jews from Assyrians; in fact it is only in the time of good art that distinctions are traceable. On the Egyptian monuments, however, we not only find very typical portraits but also an attempt at classification, for the Egyptians were a scientific people with a knowledge of medicine, and also skilled mathematicians; therefore their primitive anthropology is not unexpected.

In the first place the quality of Egyptian art is to be considered, and in looking at the plates we must first master its peculiarities. In dealing with the reliefs and fresco paintings we must remember that the eye was always represented as seen full face. We must mentally obliterate it and substitute a correct eye to give the face its proper value. In spite of this, the Egyptians had a wonderful way of representing in their portraits different types of race and in giving the character of the person. This is exemplified in the statues of Nefert and Rahotep, the husband and wife seated together, found in their tomb by M. Maspero near the pyramid of Meydum; each face has the characteristics of its sex, and both are full of strength and repose. Still more charming is the statue of husband and wife of the Ramesside period in the British Museum. They have the same distinctive characters as the Meydum group, and even greater refinement. The delicacy of execution is specially seen in the woman's feet. They have a true sympathy, sitting hand clasped in hand looking steadfastly forward into "God's Underworld," as they did from their ancient tomb. So beautiful are they that a high authority has said that our art students could not do better than make serious studies from these lifelike heads. Men who could work thus would never fail to catch some of the characteristics of those they were depicting. Even though in every king's face we can trace the same dignified calmness

and repose peculiar to the royal ideal, yet the unrolling of the mummies of Seti I and Rameses II has verified the difference in their portraits, and thus we may have faith in the representations, although we must make allowance for the type of royalty. Another characteristic of the Egyptian artists was their fondness for caricature. Perhaps we may account for this: their art was most employed in depicting solemn scenes, and now and then they found relief in an outburst of merriment which they could not repress; thus we see in a painting where the mummy is shown rowed across the river in the stately funeral procession, that one of the boats has suddenly capsized and its occupants are seen struggling in wild and ludicrous confusion. It is a strange, curious thing to find such a "painter's license" permitted in so serious a scene. Then we should remember that the Egyptians, in common with the Greeks and Romans (and may I not add we English also), had a great contempt for all other nations, and would much rather depict them worse and not better than they really were; and as all the foreign types shown on the wall paintings are of enemies, and generally captives, they have a certain woe-begone look natural to men who were being led with ropes round their necks in the processions of their victors. But even making full allowance for all these things we need not be afraid of trusting the Egyptian artist.

The date of the evidence we have extends generally from 1500 to 1200 B.C. The first type of Semites is, indeed, found in the older tombs of Beni Hasan a thousand years earlier, and we mark the peculiar type of the Hyksos or Shepherd Kings about 1700 B.C. The main documents, however, belong to the period between 1500 and 1200 B.C.

I shall carefully avoid the use of technical terms, for I wish what I have to state to be as clear as possible and intelligible to the layman. I am also most desirous to eliminate all disturbing elements, and therefore I will not raise any doubtful questions which might be disputed, as to the exact position on the map of all these races, for such debates often lead to an entire rejection of a truth although it may be quite indisputable, because it fails to convince, as all the minor details cannot be settled satisfactorily. An instance of this mistrust is found in the identification of peoples of the Libyan type with the Sicilians and Sardinians. The great majority of scholars accept this as a fact, but there are some few who deny the truth altogether, because they are not able to localise these Sicilians and Sardinians to any exact spot. They will not be satisfied with the general fact that they came undoubtedly from the islands and coasts of the Mediterranean Sea. All such disputes should be carefully avoided in an elementary statement,

as they do but disturb what is certain—the great invasion of Egypt by these islanders and coastlanders, which is an important factor in the classification of the different races.

The heads on Plate VII, 1, 2, 4, 5, are taken from the Tomb of King Seti; they are from a mythological scene, and are types representing the four races of man. Two other subjects, Nos. 3 and 6, are representations from other frescoes in the Tombs of the Kings. No. 1 is the Egyptian race, Nos. 2 and 3 Semitic, No. 4 Negro, Nos. 5 and 6 Northerners. In Plate VIII are representations from historical scenes of divisions of these races. The Egyptians class the four races thus, according to colour: 1st, the Egyptians or redskins; 2nd, the Semites or yellow-skins; 3rd, the Negroes or black men; and 4th, the Northerners or white men.

We are only entitled to say four races by allowing the Egyptians to call themselves a distinct race, which they did, as they considered themselves to be *the* race of man. (I). They were marked by their small beard and moustache, and their abundant crisp black hair; they are identical with the Copts. Two other nations come under the Egyptian type: First, the old Cushite inhabitants of South Arabia and the opposite coast of Africa, who traded with the Egyptians. Plate VIII, No. 8, is a representation of one of these, date 1600 B.C. This subject is taken from the famous reliefs of the expedition of Queen Hatshepu up the Red Sea and beyond to the Somali coast. The character of face is similar to the Egyptian, but less refined. Secondly, the Phœnicians, who are almost identical with the Egyptians in colour, and can only be distinguished from them by details of costume, such as the wearing of boots; some are lighter in colour than the Egyptians, being a northern variety of the race. We have, therefore, these two families allied to the Egyptian type, the inhabitants of the coasts of Arabia and Africa on the Red Sea, and the Phœnicians; but no other nation can safely be classed in this race. (II). No. 2 on Plate VII represents the usual Semite type on the Egyptian monuments. There is a strong likeness to the Assyrians, as shown in their own sculptures, quite sufficient to enable us to recognise the same race in both. No. 3 is a curious head resembling the Egyptian type in the beardless chin and long side lock, but it represents and really belongs to the Semitic type. (III). No. 5 is most interesting, he is a very typical Libyan northerner, wearing two ostrich feathers for his head-dress, the curious side lock, and with crisp hair, and small beard and moustache. This type is the mythological one, and markedly differs from another of the same class to be next noticed, as well as from the historical representations of different sub-races. No. 6 is

another Northerner. He is drawn in the plate too much like a Semite, the lower lip being made too projecting, for it should be parallel with the upper one. The features remind one of the Persian type. Although most of the types of other nations are represented as savage, the Egyptians did not look on all beside themselves as such, for this Northerner is richly clothed in what seems some beautiful Persian shawl robe. Under the Libyan stock, the Egyptians classed a variety of sub-races that came from the west and north. Plate VIII, No. 9 is a typical Libyan from the country to the west of Egypt. His harsh features are especially marked by the extremely strong supraorbital ridges, forming a prominence above the nose. An islander, No. 10, exaggerates these peculiarities, and may be of an even purer type. Both are very strongly accentuated forms of the mythological type, No. 5. In the islander or coastlander, No. 11, we see a less harsh variety, entirely without the supra-orbital ridges. Our difficulty with these types, except only No. 9, is in the endeavour to localize them. The Egyptians were at war with the Libyans and their allies from B.C. 1400 to 1200, when Egypt suffered five invasions from the west, and one from the east. M. de Rougé identified the invading nations with the Sards, No. 10, and Sikels, 11 (?), the primitive inhabitants of Sardinia and Sicily, who he supposed crossed to Africa, near Carthage, and joined in the invasions of Egypt. There was no more difficulty in reaching Carthage from Sicily then than there was later in Homer's time, and as we know the invading races usually came from the west and are distinctly stated by the Egyptians to have been inhabitants of the islands of the Great Sea or Mediterranean, we have no other alternative unless we bring them from the Grecian Archipelago. There is no question about the presence in the Mediterranean of these islanders and coastlanders, as we may call them, though we may not be able to localize them to any particular coast or island. The remarkable type, No. 11, is that of a nation represented by three varieties with similar features, and a remarkable head dress, who invaded Egypt from the east, and one of which undoubtedly came from the Mediterranean Islands. These last, M. de Rougé has identified with the Danai. (IV). No. 4 is not a pure negro type, rather a Nubian, but we have a negro shown in the captive, No. 12, who is as good a representation as could well be made, except, perhaps by the Greeks or best modern artists. This race was sub-divided into Negro and Nubian varieties as just shown.

There are two other most interesting races which lie outside all these classifications, the so-called Hyksos, or Shepherd Kings, and the Hittites. The Hyksos type is best represented by one of the sphinxes discovered at Zoan, or Tanis, by M. Mariette

to whom we owe the recovery of the Hyksos monuments. (A lithograph of the sphinx was here exhibited "*Rev. Archéologique*, 1861," pp. 4, 5). They conquered Egypt before 2000 B.C., and were expelled 1600 B.C., the date of the conquest being doubtful, but that of the expulsion nearly certain. These kings were the Pharaohs of Joseph's day, and the sphinx's head may be a portrait of Joseph's master. We do not know how they conquered Egypt or whence they came; they began their rule by destroying the monuments, but soon they adopted Egyptian manners and language, and organised the country, retaining much of the old system. They gave many towns new Shemite names, in addition to their old Egyptian ones; and they divided the country into two parts, ruling themselves in Lower Egypt but allowing subordinate kings to rule in Upper Egypt. One of these under-kings rebelled, and this rebellion led to the final expulsion of the Hyksos, who fled to Palestine where the whole race disappears from history. They had a remarkable type marked by an aquiline profile, enormous supraorbital ridges forming a great prominence above the nose, very high cheek bones, and flat mouth; we can find no type under which to class them. Some think they were Cushites, others identify them with the Hittites, but these Hittites are almost as obscure and perplexing; perhaps some day among fresh excavations we shall discover an Egyptian sculpture which will throw light on this enigma or perhaps a fortunate find of skulls may help us to a solution. The type is certainly not Egyptian; for this face so full of energy, firmness, and resolution, forms the greatest contrast with the air of calm repose and placid dignity peculiar to the old Egyptian kings.

The Egyptians never called these shepherd kings by the name of Hyksos; sometimes they use a term which may mean shepherds, but is vaguely employed for easterns generally; they looked on them with the utmost abhorrence, and when obliged to mention them on the monuments they sometimes called them "the plague."

No. 7 is a Hittite, a name one almost fears to use, so much has been written on the Hittites which is extremely hypothetical. We know there was a great nation west of Assyria, called Kheta by the Egyptians, Khatti by the Assyrians; their capital in the age of Rameses II was Kadesh, on the River Orontes, and they are identical in name with the Hittites of the Bible. No doubt they were the Hittites with whom Solomon traded. The Hittites fought with the Egyptians, forming the head of a great confederacy, consisting of several other tribes, and in their great mixed army represented on the monuments of Rameses II, we find distinct types of Semites and Tartars.

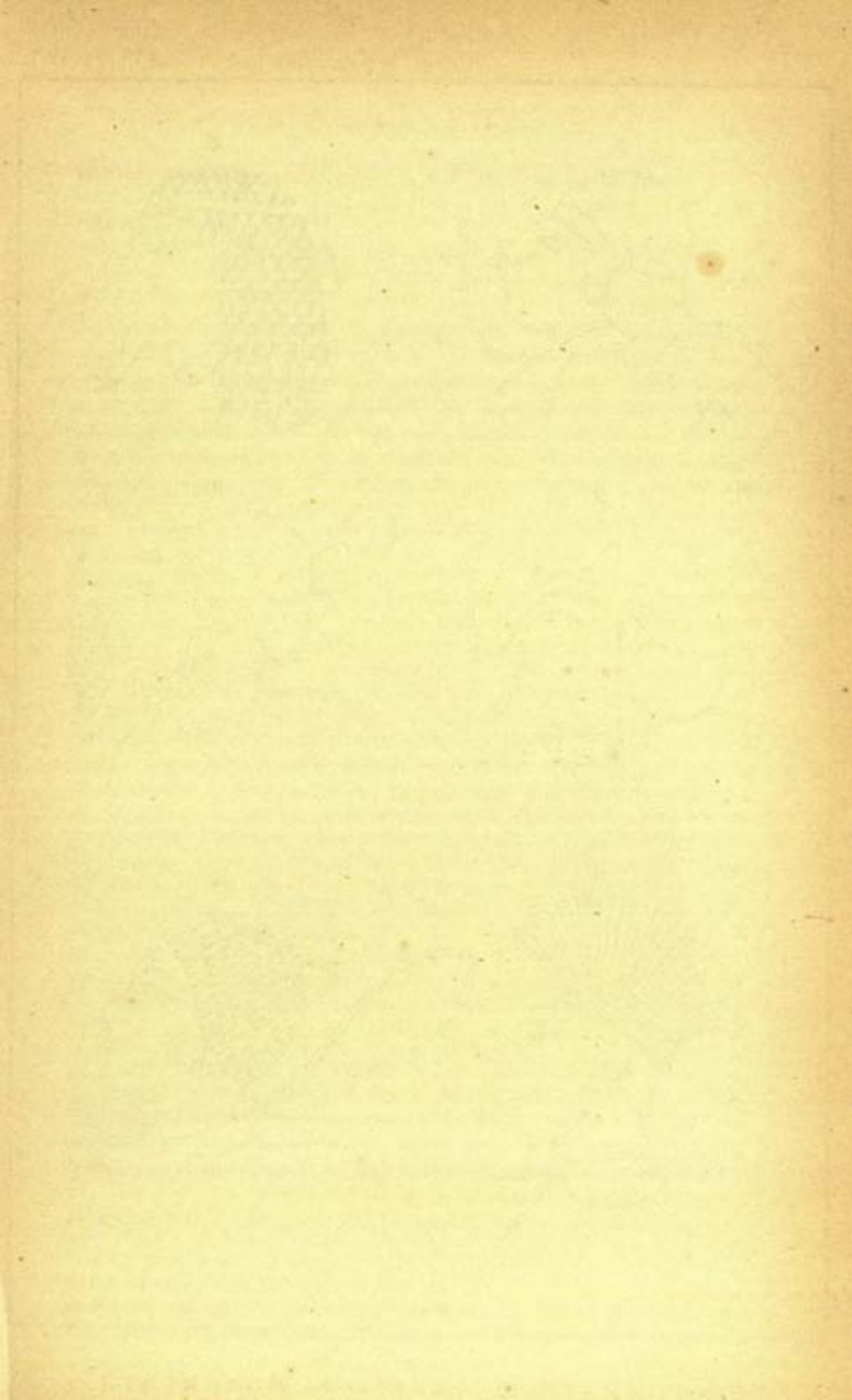
The head given is that of a Hittite king, but being an old man and rather stout it is difficult to assign him to a particular race: possibly we might associate him with the Northerner, No. 6. Another Hittite king whose daughter Rameses II married, is sculptured as of quite a different type, very like an Egyptian.

When we attempt to understand primitive representation and look at the nations of three thousand years ago to study their aspect, their dress, their language, and their art, we perceive a wonderful revelation of remote times, in an area extending over a vast expanse including the islands of the Mediterranean, and reaching from Carthage on the west as far as the source of the Tigris on the east. Surely it is worth while to obtain some trustworthy records of this amazing and deeply interesting piece of the world's history before all the precious remains are destroyed, which it seems they inevitably will be, and that very soon. Might we not succeed in securing the services of some able man combining the knowledge of an archæologist and man of science with the skill of a photographer, such as Mr. Flinders Petrie, who has already done such good work in Egypt? Could we not enlist the public sympathy sufficiently to provide the means necessary to enable us to send out such an explorer to obtain for us correct photographs of the portraiture of different races still remaining on the walls of the monuments before these most valuable records shall be lost to us for ever?¹

Explanation of Plates VII and VIII.

- Fig. 1. Rosellini, *Monumenti Storici*. Plate CLV, Tomb of Seti I. Ratu, Mankind.
 " 2. *Id.* Âamu, Semites.
 " 3. *Id.* Plate CLVIII. Âamu.
 " 4. *Id.* Plate CLX, *cf.* Plate CLVI, Tomb of Seti I. Nehsiu, Negroes.
 " 5. *Id.* Plate CLX, *cf.* Plate CLVI, Tomb of Seti I. Tamhu, Northerners.
 " 6. *Id.* Plate CLVIII. Tamhu.
 " 7. *Id.* Plate CXLIII, 7, Palace of Rameses III. Chief of Kheta.
 " 8. Dümichen, *Flotte einer aegyptischen Königin*. Plate XVI. A man of Punt.
 " 9. Rosellini, *op. cit.* Plate CXLII, 3, Palace of Rameses III. Chief of Lebu.

[¹ Since the lecture was given, Mr. Galton has obtained a grant from the British Association, and Mr. Petrie has been entrusted with this important mission.]



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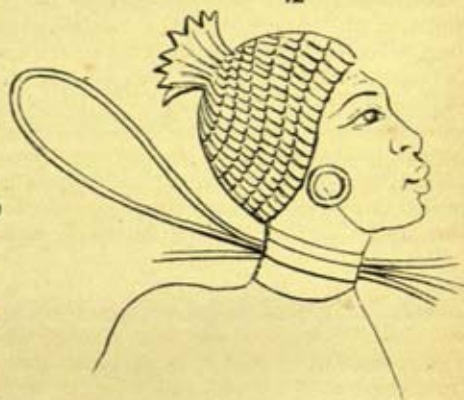
10



11



12



- Fig. 10. *Id.* Plate CXLIII, 10, *Id.* Shairdana of sea.
 „ 11. *Id.* Plate CLXI, Medinet Habu, *cf.* Plate CXLIV.
 Shakalsha.
 „ 12. *Id.* Plate CXLI, Palace of Rameses III.

DISCUSSION.

Mr. BERTIN, after having pointed out the importance of the statements made with so much clearness by the lecturer, remarked that the most important was the peculiar characteristics of the Hyksos King as revealed by the last discoveries; and he suggested that the explanation might be found in the racial origin of the invaders of Egypt, who were generally considered as Semites, but whom the classics sometimes called Scythians. This name, no doubt, does not designate any well defined population, but it was generally applied to the people of Southern Russia, and therefore might in this case refer to an Ugro-Tartar race. Mr. Bertin added that Mr. R. S. Poole had set forth the important anthropological results of the study of the Egyptian monuments with so much lucidity that it made the speaker wish that the lecturer would now turn his attention to the Assyrian and Babylonian monuments, which might also lead to some important revelations.

Professor FLOWER said that the thanks of Anthropologists were due to Mr. Poole for his careful and exhaustive analysis of the large mass of materials bearing upon the subject of races, scattered through the ancient Egyptian monuments. There were two special points of interest which had occurred to him during the reading of the paper. First, with regard to the people called by Mr. Poole "Northerners" (figs. 9 and 10), in the great development of the supraorbital ridges, and the receding character of the forehead, they resemble a type recognized in the earliest known crania found in central Europe, which has received the name of "Neanderthaloid," because it reaches its extreme development in the famous skull discovered in the Neanderthal, near Bonn. It is extremely probable that these "Northerners" were descendants from a primitive European people which had crossed over to Africa, probably by the Straits of Gibraltar in prehistoric times. Secondly, the figure of the Hyksos monarch exhibited by Mr. Poole has certain Mongolian characters, especially in the breadth and prominence of the cheek bones, so much so as to suggest that the invasion and occupation of Egypt by the so-called "Shepherds," was one of the numerous instances in which some of the nomadic Tartar hordes of Central and Northern Asia, have poured forth from their native lands, and overrun and occupied for a longer or shorter period the countries lying to the west and south of them. If this view can be maintained, the Hyksos invasion and occupation of Egypt would have been only one of the series, of which the conquests of Attila, Tchinghis Khan, and Timur, and the more

permanent settlements of the Finns, the Magyars, and the Turks in Europe, are well-known examples.

Mr. HILTON PRICE said he had listened with considerable interest and attention to Mr. Poole's lecture, and should like to ask him a few questions. Could he tell him which of the tribes he had described he considered to be the Khita and the Rutennu respectively, of whom we read so much upon the Egyptian monuments, and whether he considers No. 2 or No. 6 of his illustrations to represent the Rutennu who Champollion said were Lydians, and who held sway over the whole of Syria, including Assyria and Babylonia, until they were conquered by the Khita.

Referring to the interesting drawing of the Sphinx handed round, which Professor Flower considers to have a marked Mongolian type of feature, and which Mr. Poole ascribed to the Hyksos period, Mr. Hilton Price would like to be informed whether Mr. Poole thought the Hyksos were the Amon, as we learn from M. Chabas, in his "*Etudes sur l'Antiquité Historique d'après les sources Egyptiennes*," page 92, that the Amon embraced all the great nations of Central and Eastern Asia, Palestine, Syria, Asia Minor, Chaldea, and Arabia, and as Professor Flower said those races of Central Asia were a pastoral sort of people, and as the Hyksos were often called Shepherds, might not they have been these Amon?

Mr. HYDE CLARKE said he would not follow Professor Flower into the regions of speculation in which he thought the Professor was coming nearer to a solution. He did not consider that Mongolians were to be reduced to the one scholastic type, and had always been disposed to look for the Hyksos among those Turanians who had played so large a part in prehistoric times in Syria, in Asia Minor, and indeed throughout Europe and the East. What he wished to do was to stimulate the Institute to profit by the valuable notes and suggestions of Mr. Poole on a most important anthropological topic. He would urge that a committee should be formed to give effect to Mr. Poole's plans. One part of these was to obtain the advice of other Egyptologists as to the monuments to be copied. This should be carried out on their President's plan on some scale uniform for comparison, and which could be afterwards applied for comparison with other representations, Akkad, Khita, Etruscan, Assyrian, Cypriote, &c. He would recommend the President to bring the matter before the British Association at Birmingham, forwarding a recommendation and application for a small grant. This he thought they might naturally expect would be granted.

Mr. THEODORE BENT, Mr. A. L. LEWIS, and the PRESIDENT also took part in the discussion.

Mr. POOLE in reply expressed a hope that Mr. Bertin would make a similar endeavour to lay before the Institute the anthropological evidence of the monuments of Babylonia and Assyria, and agreed in admitting the importance for the Hyksos problem of the Scythic element in early history. This Mr. Flower had shown in his remarkable criticism of the Hyksos head from a sphinx discovered

at Sán (Zoan, Tanis), in which he saw Mongolian characteristics. Further, in showing that the earliest European type, that of the Neanderthal cranium, was seen in the aquiline variety of the "Northerners" with strongly marked supraorbital ridges and receding forehead, Mr. Flower had made a most important discovery. His view received support from the existence of megalithic monuments along the North African coast, extending, he believed, as far east as Algeria.

ANNUAL GENERAL MEETING.

JANUARY 25TH, 1887.

FRANCIS GALTON, Esq., F.R.S., *President, in the Chair.*

The Minutes of the last Anniversary Meeting were read and signed.

The PRESIDENT declared the ballot open, and appointed the Rev. E. S. DEWICK and Mr. C. H. READ Scrutineers.

Mr. F. G. H. PRICE, the Treasurer, read the following Report for the year 1886, which was adopted.

TREASURER'S REPORT FOR 1886.

The amount received from subscriptions is less than last year by £25 5s., although £57 16s. arrears has been paid, against £48 6s. in 1885. In that year, however, three compounders' fees of £21 each had been received, whereas only one member has compounded in the year just passed.

The sale of publications has produced £83 12s. 10d., and a small sum is still due to the Institute.

The total amount received has been £657 18s. 10d., which is £36 8s. 7d. less than the corresponding receipts of last year.

The cost of printing the four numbers of the *Journal* has been £215 16s., this is £52 17s. 6d. more than last year, when the amount paid was exceptionally low, but is not above the average cost of the four numbers for which payment is made in the course of the year; the increased expenditure has been caused by the printing of tabular matter which is always expensive.

The illustrations have cost £30 18s. 10d., against £27 8s. 8d. in 1885.

The cost of postage and office expenses is within a few shillings the same as last year.

The house expenses amount to £33, being £9 17s. less than in 1885.

The fees paid for the incorporation and registration of the Institute amount to £14 5s. 2d., and the expenses incidental to the meetings held in the Conference Hall of the Colonial and Indian Exhibition were £2 4s.

The total current expenses of the year have been £11 15s. 4d. more than last year, but £34 7s. 7½d. less than in 1884, and £48 9s. 11½d. less than in 1883.

The balance is £119 19s. 2d., against £176 17s. 1½d. last year.

The subscriptions in arrear amount to £189, the greater part of which may be considered good.

F. G. HILTON PRICE,
Treasurer.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

Receipts and Payments for the Year ending 31st December, 1886.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
BALANCE, January 1st, 1886:			RENT, one year to September, 1885.....	165	0 0
At Bankers'	171	1 11	PRINTING:		
In Office.....	5	16 0	Journal, Nos. 52, 53, 54, 55	215	16 0
		176 17 11	Miscellaneous	27	2 0
				242	18 0
SUBSCRIPTIONS:			LITHOGRAPHY, &c.	30	18 10
Paid to Messrs. Roberts & Co.	74	11 0	SALARIES AND COLLECTOR'S COMMISSION	164	7 8
" Collector	398	19 0	POSTAGES:		
" " due 1885	57	15 0	Journal	16	0 5½
" " in advance	12	12 0	Letters and Post Cards	10	14 4
		543 17 0	Book Parcels and Circulars	7	3 2
SALE OF PUBLICATIONS:				83	17 11½
Messrs. Trübner & Co.	77	5 6	ADVERTISING	5	0 2
Messrs. Longmans & Co.	3	13 5	COST OF INCORPORATION, &c.	14	5 2
Office	2	13 11	EXPENSES OF CONFERENCES AT THE COLONIAL AND INDIAN EXHIBITION	2	4 0
		83 12 10	OFFICE:		
			Stationery and Collector's Book	10	14 3
			Receipt Stamps, &c.	4	15 5
			Insurance	1	0 0
			Carriage of Parcels.....	4	0 7½
			Miscellaneous	2	15 6
		30 9 0		23	5 9½
DIVIDENDS:					
Four quarters on £900, 3½ per cent. METROPOLITAN STOCK					

<hr/>		
HOUSE:		
Assistance and cleaning rooms.....	15 10 0	
Refreshments at Evening Meetings	17 10 0	
	<hr/>	33 0 0
BALANCES:		
At Bankers	114 12 4	
In Office.....	5 6 10	
	<hr/>	119 19 2
		<hr/>
		<u>£834 16 9</u>

F. G. HILTON PRICE, *Treasurer*.

Examined and found correct,
 (Signed) GEORGE M. ATKINSON, } *Auditors*.
 EDWARD W. BRABROOK, }

1st January 1887.

Mr. F. W. RUDLER, the Secretary, then read the following Report:—

REPORT OF THE COUNCIL OF THE ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND FOR THE YEAR 1886.

In the course of the year which has just ended the Institute has held no fewer than eighteen meetings. The presence of an exceptionally large number of colonial visitors in London during last year suggested to the Council the advisableness of eliciting information of an authentic character respecting the present condition of the Native Races of the British Possessions. Five special meetings were accordingly held during the months of June and July in the Conference Hall of the Colonial and Indian Exhibition. In order to make room for these Conferences, the last of the ordinary meetings of the Session, which would have been held in June, was omitted; the number of ordinary meetings being thereby reduced to twelve.

During the past year the following forty-four papers and other communications have been read before the Institute, namely:—

1. "On Recent Designs for Anthropometric Instruments." By Francis Galton, Esq., F.R.S., President.
2. "On a Skull from an Ancient Burying Ground in Kamtschatka." By Professor A. Macalister, F.R.S.
3. "On the Cephalic Index." By J. G. Garson, Esq., M.D.
4. "On Australian Medicine Men." By A. W. Howitt, Esq., F.G.S.
5. "On the Numerals of the Yoruba Nation." By Adolphus Mann, Esq.
6. "On the Flint-knappers' Art in Albania." By A. J. Evans, Esq., M.A.
7. "On some Stone Implements found in South Africa." By W. H. Penning, Esq., F.G.S.
8. "Notes on Some Prehistoric Finds in India." By Bruce Foote, Esq.
9. "On some Instruments for Anthropometric Research." By J. G. Garson, Esq., M.D.
10. "On the Present Condition of the Bechuana, Koranna, and Matabele Tribes." By Captain C. R. Conder, R.E.
11. "The Origin of Agriculture." By H. Ling Roth, Esq.
12. "On the Sengirese." By Dr. S. J. Hickson.
13. "On Permanent Colour-types in Mosaic." By Francis Galton, Esq., F.R.S., President.
14. "On some African Skulls in the Cambridge University Museum." By Professor A. Macalister, F.R.S.
15. "On the International Agreement on the Cephalic Index." By J. G. Garson, Esq., M.D.
16. "On the Skeleton and Cephalic Index of Japanese." By J. G. Garson, Esq., M.D.
17. "On a Skull from New Ireland." By Professor A. Macalister, F.R.S.
18. "The Ancient Egyptian Classification of the Races of Man." By Reginald Stuart Poole, Esq., LL.D.
19. "The Present Condition of the Native Population of the Cape of Good Hope." By R. J. Mann, Esq., M.D.
20. "On the Condition of the Natives of the Gold Coast Possessions." By Sir James Marshall.

21. "On Ethnological Objects from South Africa." By C. D. Webb, Esq.
22. "On the African Tribes of the British Empire." By J. Thomson, Esq.
23. "On the Natives of Cyprus." By Hamilton Lang, Esq.
24. "On the Natives of British Guiana." By E. F. im Thurn, Esq.
25. "On the Caribs." By G. H. Hawtayne, Esq., C.M.G.
26. "On the Natives of British North America." By Dr. J. Rae.
27. "On the Ethnological Exhibits in the Colonial and Indian Exhibition." By C. H. Read, Esq., F.S.A.
28. "On American Shell-work and its Affinities." By Miss A. W. Buckland.
29. "On some Ethnological Objects from Ceylon and the Maldiv Islands." By C. W. Rossett, Esq.
30. "On the Native Races of Australia." By James Bonwick, Esq.
31. "On the Natives of New Zealand." By F. W. Pennefather, Esq.
32. "The Aborigines of Fiji." By the Hon. James E. Mason.
33. "On the Native Tribes of the Straits Settlements." By F. A. Swettenham, Esq.
34. "On the Natives of British North Borneo." By W. B. Pryer, Esq.
35. "On an Interpretation of one of the Copan Monuments." By Dr. E. T. Hamy.
36. "The Aborigines of Hispaniola." By H. Ling Roth, Esq.
37. "The Tribes of the Eastern Soudan." By Donald A. Cameron, Esq.
38. "On some West African Symbolic Messages." By George W. Bloxam, Esq., M.A., Assistant Secretary.
39. "The Races Inhabiting Sierra Leone." By T. R. Griffith, Esq.
40. "On Papuans and Polynesians." By the Rev. George Brown.
41. "On Songs and Song Makers of some Australian Tribes." By A. W. Howitt, Esq., F.G.S.
42. "Music of the Australian Aborigines." By the Rev. G. W. Torrance, Mus.D.
43. "On the Aborigines of Western Australia." By R. H. Bland, Esq.
44. "A Brief Account of the Aboriginal Races of Manipur and the Naga Hills." By George Watt, Esq., M.B., C.B.

The four numbers of the *Journal* published during the year, viz., Nos. 54, 55, 56, and 57, contain 482 pages of letterpress, with 12 plates of illustrations. These Journals have appeared with punctuality.

During the past year 22 new members have been elected, of whom 16 are ordinary, 4 honorary, and 2 corresponding members.

The Institute has lost through death or resignation, 21 ordinary members, and 1 corresponding member.

The former and present state of the Institute, with regard to the number of members, are shown in the following Table:—

	Honorary.	Corresponding.	Compounders.	Ordinary.	Total.
January 1st, 1886	43	76	89	285	493
Since elected ..	+ 4	+ 2	..	+ 16	22
Since deceased ..	..	- 1	- 2	- 7	10
Since retired ..	..	..	..	- 12	12
January 1st, 1887	47	77	87	282	493

It will be seen from this table that the total number of members of the Institute at the present time is precisely the same as at the corresponding period of last year. At the same time it is matter of regret that there has been a falling-off, though a very slight one, in the number of subscribing members.

The Council appeals to all who are interested in any of the various branches of the Science of Man to assist in the development of the Institute by securing additional members.

With an enlarged income the efficiency of the Institute could be increased, and it is especially desirable that more funds should be available for the improvement of the Journal.

The Council regrets to report that the Institute has lost through death the following Members:—The Viscount Barrington, Mrs. Bathoe, Professor George Busk, Mr. F. T. Hall, Mr. Andrew Maclure, Major-General Sir Arthur Phayre, Rear-Admiral Bedford Pim, Mr. C. H. Williams, Dr. R. J. Mann, and Dr. J. F. N. Wise.

The Council regrets that Mr. F. G. H. Price, to whom the Institute has been indebted for so many years for carrying on the duties of the Treasurership, has felt that the continuance of these financial cares is incompatible with the active prosecution of his archæological investigations. On receiving Mr. Price's resignation as Treasurer the Council marked its appreciation of his long and valuable services by a special vote of thanks. In proposing Mr. A. L. Lewis as his successor in the office of Treasurer, the Council feels that it is nominating a gentleman who unites a professional knowledge of accounts with sincere zeal for the welfare of the Institute.

It was mentioned last year that the Council proposed to take steps for the incorporation of the Institute under the Companies Acts, 1862 to 1883. In accordance with the resolution passed at the anniversary meeting in January, 1886, the incorporation has been effected, and the members have therefore the satisfaction of knowing that the Institute is now placed in a legal position superior to that which it had occupied during the previous period of its existence.

The adoption of the Reports of the Treasurer and Council was proposed by Mr. G. M. ATKINSON, seconded by Mr. M. BEAUFORT, and carried unanimously.

The PRESIDENT then delivered the following address:—

ADDRESS *delivered at the* ANNIVERSARY MEETING *of the* ANTHROPOLOGICAL INSTITUTE *of* GREAT BRITAIN *and* IRELAND,
January 25th, 1887.

By FRANCIS GALTON, Esq., F.R.S., President.

OUR Institute, as appears from the Report of the Council, and as I hope from your own observation also, continues to perform its self-appointed task with usefulness, and to satisfy to the best of its opportunity the current needs of anthropological record and research.

It was formally incorporated under the Companies Acts on March 26th.

The year that has passed by has been eventful to it in many respects. The Institute has sustained, as in the course of nature it must do from time to time, the loss of valued members by death; it has also witnessed a considerable widening of the field of anthropological interest.

The nearest of our losses is through the death of our former judicious President, Mr. George Busk, distinguished in many lines, but in those which concern us, more especially as a craniologist. No one is better qualified to do justice to his labours in this special department of anthropology than his intimate friend Professor Flower, who at my request has kindly drawn up the notice of his life and works which will be found printed after this Address (p. 403).

Sir Arthur Phayre, G.C.M.G., was an administrator of high rank, who eminently devoted himself to the study of the men over whom he had to rule, and whose frequent memoirs, geographical and others, connected with Burmah, made him for many years the principal authority upon that country.

Through the death of Dr. Mann we miss a frequent attendant at many scientific meetings, who had been an eager exponent of South African ethnology for many years, and always ready to give or to obtain information for scientific inquirers on African subjects. In advanced age, though suffering from the severe bodily infirmities which ended in death, he superintended the

arrangement of the Ethnological Collection of Natal in the late Colonial and Indian Exhibition, and almost, if not quite, his last public appearance was when reading a memoir upon them at one of our Conferences in that building.

These and other active and efficient members have been taken from us, while new and zealous men have joined our ranks, so the Institute as a whole lives and thrives like an organic body; each of us in his turn plays his part, then falls away, and another succeeds to his place.

I will in my further remarks on the past year refer not directly to our own proceedings, as they appear set forth in our Journal, under the careful and willing editorship of Mr. Rudler, but to those instances of our action outside, with which members have less opportunity of becoming acquainted.

An extensive ethnological inquiry has been initiated by the Council of the Palestine Exploration Fund. They formed a Committee upon which I was appointed to serve on behalf of this Institute, to draw up a list of questions applicable to the various races inhabiting Syria, which are to be placed in the hands of the numerous persons who come within the sphere of their operations. Many of these have had medical instruction and are likely to prove competent observers. The task of doing this was ultimately placed mainly in the hands of Captain Conder, R.E., to be carried out upon the general lines laid down in the Anthropological "Notes and Queries," but of course they have been much modified to suit the special inquiry. The questions are now printed and will very shortly be distributed.

The Anthropological "Notes and Queries" to which I have just referred, are running out of print. They were drawn up by various members of our Institute, at the suggestion of and under the editorship of our then President, Colonel Lane Fox, now General Pitt-Rivers. They were published at the cost of the British Association, who at their last meeting constituted a Committee from among the former writers of the little volume, to consider the propriety of publishing a second and revised

edition. The Association also made a small grant to cover initial expenses.

The British Association has further assisted the objects of our Institute in another way. It will be recollected by many that in the course of a discussion last spring that arose after the memoir read by Mr. Reginald Stuart Poole on the races portrayed in the ancient Egyptian monuments, that gentleman pointed out the urgent importance of obtaining photographs of all those sculptures and pictures that refer to persons of known races. He also suggested that Mr. Flinders Petrie might be induced to undertake the task of making them. Many of our members entered warmly into this view, and on application being made to the British Association a grant was made by that body to a Committee of which I was chairman, to carry this proposal into effect. The Committee has met and discussed the matter with Mr. Petrie, who was then in this country. A list of about 70 of the portraits that appear most desirable to photograph, was drawn up and carefully considered, and Mr. Petrie willingly undertook the labour of photographing them, so far as opportunity should permit. He is now in Egypt.

The Ethnographical Gallery at the British Museum was thrown open in April last after its re-arrangement in rooms left vacant through the removal of the Natural History collection to South Kensington. The adjoining Asiatic saloon, which contains specimens of Oriental art and objects illustrative of the Oriental religions, was opened at the same time. The collection now comprises that formed and bequeathed by Mr. Christy 20 years ago, which, for want of space in the Museum had remained for most of that time comparatively unknown to the public, and installed in his former private residence. The whole has been very largely extended and supplemented through the continued zealous efforts of Mr. Franks. The arrangement of the pre-historic section is being vigorously proceeded with and will probably be completed in the spring. It will include the collection of Canon Greenwell as well as the pre-historic portion of that of Mr. Christy. Greatly as the space allotted to the collection has been

increased, and though it now occupies a magnificent suite of rooms, it is still seriously cramped in many of its sections. It is far from being as amply housed as those of Berlin and Vienna. Its area is too small for the legitimate requirements of a collection whose object is to explain the development of the faculties of mankind by specimens of their handiwork, beginning with those of pre-historic times and passing through successive and parallel stages of barbarism to the dawn of the higher modern civilization.

The anthropological collection presented by General Pitt-Rivers to the University of Oxford, is now nearly arranged by Professor Moseley in the building erected by the University to receive it. The ground floor will be thrown open to the public daily in the afternoon during the present term, and Dr. E. B. Tylor will lecture every Monday afternoon on the collections in the building. There is hope that the remainder of the room will be opened before the end of summer. It is gratifying to find that this magnificent collection excites much interest in the University, and is likely to be largely frequented.

Another great event of anthropological interest to us in the past year was the Colonial and Indian Exhibition, whose exhibits, so far as they concerned ethnology, were well brought into notice during the series of Conferences held by our Institute in the Conference Hall of that building. The subjects of the various Conferences will be found described in the Report of the Council and in the Journal of the Institute.

It has, moreover, led to the project of an Imperial Institute, that shall also serve as a memorial of the 50th year of Her Majesty's reign. Its principal function will be to bring us, who live in the mother country, into close and permanent touch with our fellow subjects of all varieties of race, creed, and mode of thought, who are spread over Her Majesty's dominions. It is a grand idea, which, if adequately carried into effect, will prove a noble achievement. Primarily the object of the Imperial Institute is to afford a centre of intelligence for commerce and emigration; but a busy mart and frequent meeting place for representatives

of all the races in the British dominions cannot fail incidentally to become an important centre of anthropological intelligence. It is in reference to that aspect of the future Imperial Institute, which also in some degree characterised the past Colonial and Indian Exhibition, that I offer the following remarks.

I am not sure whether there is any need for me to allude at all to a proposal that has been publicly urged, that a prominent feature of the Imperial Institute should be an Ethnological Museum of the races in the British dominions. There is no reason, so far as I have heard, to suppose that a museum of this kind is likely to be included in the plan, but as a proposal for it has been and may again be brought forward, I think it is well to show reasons why so costly and large an adjunct would not be of first-rate importance to us. The British possessions are spread widely over the globe, but they do not by any means include representatives of all the races that inhabit it. It follows that an Ethnological Museum, limited to the handiwork of populations subject to the British rule, cannot have the same scientific importance and interest as such general ethnological collections as those at the British Museum and at Oxford, of which I have just spoken. There seems to be no very useful stage half way between a good local and a good general museum. The former exhausts the peculiarities of its district, the latter collates analogous objects from every district where they exist, and makes each help in interpreting the rest. It therefore seems to me undesirable to ask that a prominent feature of the future Imperial Institute should be an ethnological collection, limited to the particular group of races who happen now to fall within the British possessions; on the other hand, the desire of any colony to maintain a local museum of its own would, I conceive, receive warm encouragement from anthropologists.

In the hope that the proposed Imperial Institute will be a focus for anthropological reference and information, we ought cordially to wish it success. With its prospective libraries, with the opportunities it will afford of personal intercourse with

colonists, and by the stimulus that it is capable of giving to a wide scientific co-operation, it may become a powerful agent in advancing anthropological knowledge and research.

The Colonial and Indian Exhibition brought forcibly to notice the rapid diminution in present and future importance of the barbarous races who inhabit the temperate regions of the world in which Europeans are now establishing themselves. Their peculiarities are losing present interest and are becoming historical and archaic, little to be taken into account in reckoning upon the future of those regions. They are to the new European lords of the soil of not much more consideration than the vegetation of the wilderness might be to the owner of a newly reclaimed and scientifically cultivated farm. The whole of the exhibits of native handiwork in the large courts occupied by Canada made so small a show that they could have been partly placed on an ordinary sized dinner table and partly hung up on the wall behind it.

In such colonies as these the anthropological interest of the future will become less and less concerned with the customs of the barbarous races who may still inhabit them, and more and more assimilated to that which we now take in the inhabitants of the United Kingdom. A vast deal remains to be done at home before this interest can even be moderately satisfied. It is but very lately that we have acquired a fairly exact knowledge of the most marked physical peculiarities of our countrymen; as to their mental characteristics they are almost untouched by the methods of strict scientific inquiry. Whatever concern we justly feel in taking stock from time to time of our race at home, and in discovering how far its quality is improved or deteriorated by locality, occupation, or other influences, that concern will be even more keenly felt in extending a similar inquiry to distant settlements of our race, where the differences of environment are greater than with us, and their effects are therefore less liable to be confused with those of concurrent and hidden influences. In astronomical language they will have a larger parallax, and therefore the errors of observation will be

less liable to vitiate the results. We can be sure that whatever effort we may bestow upon inquiries into the vital statistics of the numerous communities of our race who are settled in diverse climates and under various circumstances, will be more effective in solving the problems of sociology than the same amount of effort limited to investigations in the mother country.

Here I will draw your attention to the very important aid to sociological research that is likely to be given by the International Statistical Institute which Sir Rawson W. Rawson has had the good fortune to succeed in establishing. It is a body of great administrative weight and influence. It consists of members and associates, limited to the number of 200, who are heads of official statistical bureaux in all parts of the world, of commissions and of societies, and others who have special statistical knowledge or qualifications. Its object is to introduce uniformity, as far as may be, in statistical returns, so as to make those of different countries mutually comparable, and to stimulate the interests of Governments and individuals in the study of social phenomena. This Institute as at present arranged, is to meet biennially. The present year will be that of its second meeting, and at Rome.

As regards India and the Colonies in which the native population is large and is likely to subsist, whether owing to its vitality being strong enough to hold its own against that of the whites in a fair field of competition, or because the white races cannot thrive and multiply in their climates, additional objects of anthropological research will abound. Each of the various native races call for as much study as our own, and the sociological problems that arise from the mixture of races introduce a further complexity. Moreover, they are problems not only of academic interest, but they are living conditions that statesmen have to face and deal with.

I must diverge for a moment to express the welcome we afford to the Anthropological Society newly established at Bombay, for the discussion of Indian topics. It seems to be

supported on all sides by natives as well as Europeans, with the utmost cordiality. The first number of its publications reached me a few days ago, and judging from the variety of its contents, and the originality of its papers, it seems likely to give valuable future aid to the advancement of our science. Also, I will take this opportunity of referring to another new Anthropological Society, that of Japan. It has already during the few months of its existence, published two numbers in the Japanese language, with some illustrations, and English tables of contents. The society has been instituted at a most propitious moment, when the traditions and usages of Old Japan remain in full memory, while the rapidly growing culture of New Japan has become sufficiently advanced to make their collection and study a matter of interest to the people. No doubt some of the more valuable papers in this journal will hereafter appear in one or other of the chief European languages. The curse of the Tower of Babel, in whatever sense we may employ the phrase, has long pressed heavily upon scientific men in Europe; the contemplation of the additional burden on our descendants of having possibly to learn Japanese, Russian, and Chinese as well as the western European languages can hardly be indulged in with equanimity.

The recent extraordinary spread and domination of the white races over the world is forcibly brought into notice by the various political treaties that have lately assigned vast regions in the Pacific Islands and in Africa to the protectorate of one or other of the great European Powers. It makes us again consider the often discussed problem whether any offshoots from European races are destined to take root and to naturalise themselves in the tropics, or whether the conditions of life in those climates are so prejudicial to their health, vigour, and fertility as to exclude the possibility of such an event.

It seems strange to say, after the experience of generations that we have had in India and elsewhere, that adequate data for the decisive answer to this question by appeal to past fact, do not appear to exist. Statisticians who have attempted the

problem have commonly arrived at this conclusion. The paucity of available data is due to the habit of successful colonists to return to their homes in later life, and for their children, even if they settle in the land where they were born, to marry European wives, and so to import fresh blood. Besides this the field of inquiry is full of statistical complexities and pitfalls, so much so as to render it futile to attempt to fairly state and weigh such evidence as exists, on an occasion like the present. However, I am desirous to say something on the subject, and to bring to your notice two or three general considerations, that are not without importance in themselves, and which have an independent interest of their own.

The unsuitability of the tropics for European settlement is principally due to their heat and to their diseases. I will consider these separately.

As regards heat we should bear in mind the great and increasing power of man to control within doors the influence of the out-of-door temperature. It has been almost wholly exerted until very recent years in resisting cold, with the happy result that active industries are carried on under inclement skies throughout the year, irrespectively of season, and that a highly refined and artificial society exists in countries which without warming appliances could be inhabited only by rude races, half dormant during the winter. It is difficult to assign any limit in the direction of the poles at which civilisation is impossible on account of the incapacity of man to battle with the cold. That limit is certainly not reached at St. Petersburg nor at Archangel.

It has not been the practice until very recent times to produce cold on a large scale by artificial means. I do not speak of the cooling produced in dry air by the evaporation of water, nor of that produced by radiation into space from the surface of the ground when the air is very still and the sky perfectly clear; these are exceptional circumstances, and are absent in the countries where the oppression of a hot and humid atmosphere is most severely felt. But I mean such cooling as is

produced on a large scale and of great intensity by one or other of the several forms of refrigerating machines worked by coal that are now used in the transport of frozen meat even from the Antipodes, and to preserve it for a long time in the same condition after its arrival in this country. It is reasonable to ask whether it might not be possible to alleviate the heat at least of sleeping rooms where there is no opening and shutting of doors, by some such process, and so to render the tropics more habitable to Europeans than they now are.

The idea is not new. It was, I believe, first broached by the late Mr. Siebe in his examination before the Commission of 1863 into the Sanitary State of the Army in India (pp. liv and 326), and now that his machine and those of many other inventors are largely employed and their use is rapidly extending, the same idea has again been occasionally brought forward. I would refer those who desire late intelligence about refrigerating machines to Mr. T. B. Lightfoot's admirable paper upon them in May last (1886) before the Institution of Mechanical Engineers, and to the discussion that followed. A previous memoir by the same author before the same society was read in 1881. I have, however, come across no calculations of the expense of cooling sleeping rooms in hot climates, so I have myself made a calculation for a single typical case which will afford a useful basis for hypotheses of what is or may hereafter be feasible.

In an occupied room when the purity of the air neither increases nor diminishes, the volume of outflowing air in each unit of time must contain just as much impurity as was being exhaled into the general body of air in the room during the same period. The greater the rate of outflow and replacement by fresh air the less the percentage of remaining impurity. Experience shows that an outflow of 1,200 cubic feet of air per man per hour, and a corresponding inflow will keep a room in these climates in fair condition; 1,500 would probably suffice in the tropics. This amount is, of course, independent

of the size of the room, and it is that which is now allowed in barracks.¹

The volume of air that actually passes through the lungs is comparatively insignificant, being only from 7 to 8 cubic feet per man per hour, or the one hundred and fiftieth part of the air needed for ventilation.

In supplying cold air under the supposed circumstances it must at the same time be dry air, else its mixture with the hot humid atmosphere would produce a cloud of vapour. The special case I will examine is that where it is required to supply air at 70° Fah., with a dew-point of 60°, when the temperature of the surrounding atmosphere is 90°, and the air is damp to saturation.

At a barometric pressure of 30 inches each cubic foot of the air to be supplied contains a weight of 514 grains troy of dry air associated with 5 grains of vapour. The same weight of dry air when raised to 90° and fully saturated will contain no less than 15 grains of vapour. Therefore for each cubic foot of supply, 10 grains weight of vapour in excess will have to be condensed into water, and to do this exhausts no less than 78½ per cent. of the total cooling power that is required.

I find this total cooling power to be such that 68 grains of ice at 32° will effect it,² in other words that one ton of ice will supply air of the desired quality sufficient for one man, namely, 1,500 cubic feet per hour, for 127 hours, or during 16 nights of eight hours each.

There are some additional items of cooling to be effected, but

¹ See "Healthy Dwellings," by Captain Douglas Galton, C.B., F.R.S., 1880.

² The number of units of heat required—

(1) To melt 68 grains of ice at 32° F. into water of the same temperature and—

(2) To raise that water to 70°;

Are equal to the number of units of heat parted with—

(3) To condense 10 grains of vapour at 90° to water of the same temperature ;

(4) To cool that water from 90° to 70°;

(5) To cool 514 grains of dry air to the same amount, and—

(6) To cool the 5 grains of vapour that are associated with it.

they are relatively insignificant in amount. About 530 grains of vapour per man per hour are given off from the lungs and skin, and all of this has to be condensed. But as we have already allowed for the condensation of ten times 1,500 or for 15,000 grains per hour, the additional demand in this respect is only one twenty-eighth part of that which has been already met.

Again, the volume of heated expired air is said in the tropics to be less than in these climates, and to be only 7 cubic feet per hour; its temperature will be say 98°. The additional demand for cooling somewhat less than this small quantity of dry air through 28°, is insignificant compared to the first charge which has already been met, of cooling 1,200 cubic feet through 20°.

Again, we may safely assume that the amount of warmth radiated from the surface of the body or carried away from it by heated currents is of relative insignificance, but I have no data to estimate it correctly.

We may fairly conclude that an additional 5 per cent. to the previously calculated quantity of ice would more than cover the demand for all these additional purposes.

We have lastly to consider the waste of ice owing to the invasion of heat through the walls and roof. Of course these would have to be made of very good non-conducting material, like the walls of refrigerating chambers.

Allowing for everything, it seems that a ton of machine-made ice, which can be produced at the prime cost of a very few shillings, might well serve to cool the sleeping room of one man for a fortnight. Artificially made ice can, as I learn on inquiry, be bought at the works at any time in London, if on a large scale, at 20s. a ton. It is carted, delivered, and stored for 30s. a ton.

The cooling of a sleeping room even by the costly method of artificially made ice would therefore be by no means a serious expense in comparison to other luxuries, and the details of successfully constructing a refrigerated sleeping room seem

to present no serious difficulty and to involve no large cost. It is easy to imagine how the ice would have to be stacked as in an ice house, above the ceiling of the refrigerated chambers among air flues ; and how the inlet pipe before entering the room might pass by the newly incoming warm air from the outside in order that the saturated and over-chilled air should yield some of its cold to it, and enter the room as a somewhat less cold but dry air. Whether a better and much cheaper way of cooling a sleeping chamber by compressed air or otherwise might not be employed, is another question into which I do not enter. Certainly experiment is desirable, for whenever the problem of artificially cooling bed chambers and dwelling rooms shall have been practically solved, one of the difficulties in the way of Englishmen naturalising themselves in the tropics will have been removed.

As regards the diseases of hot climates which severely affect most Europeans, experience has largely shown that tropical countries are much more habitable in established settlements than they were to travellers and to the earlier settlers who were destitute of wholesome comforts. Sir Bartle Frere laid much stress on this, and quoted striking instances of it in India, in his memoirs on Eastern Africa.

Sanitation has within very recent years improved the life rate of our soldiers in India, so much so that the proportion who die annually is stated to be only one-quarter as great as it was a few years ago, their death rate now lying between 15 and 17 per thousand, while before the Crimean War it was between 60 and 70 per thousand.

There is I presume little chance of mere acclimatisation producing much effect in a few generations, or of an acquired capacity of withstanding tropical disease being transmitted hereditarily to descendants. The successful settlement of tropical countries seems to depend on "accidental" varieties of our race being found able to thrive in them. There is a marked difference between the power of different Englishmen to withstand, for example, the effects of African climate. It has been

a prominent feature among the successful explorers of that country that although they may frequently suffer from fever, it takes no permanent hold upon their constitution. It is clear that men possessing such natural peculiarities, have a far better chance than others of naturalising themselves and their descendants in tropical homes. There is therefore some hope of vigorous varieties of the English race being found able to establish themselves in our tropical possessions. The process would be effected least wastefully to life, through a step-by-step fashion; emigrants from families already thriving in sub-tropical countries being likely to include a much larger proportion of individuals capable of thriving in still hotter climates than those coming directly from England.

Much has recently been written on the difficulty of any rare accidental variety of animal or plant establishing itself, when it has unrestricted opportunity of intercrossing with the parent stock. It is urged that the peculiarity would be halved in each successive generation, and would very soon cease to be apparent in the descendants. It seems to me that this argument is sometimes pressed too far. It cannot be a general truth that characteristics blend, else, to take a conspicuous example, there would be a growing tendency in every mixed population for the eye-colour to become of a uniform hazel or brown gray tint, through the intermarriage of persons whose eye-colours differ widely. On the contrary, I have lately shown by a considerable body of statistics¹ that among the English, the proportions between the eye-colours, as sorted under seven headings, has not changed at all during four generations. The fact is that heritages are only partially liable to be blended together; partially they are mutually exclusive. No case of inheritance probably falls altogether under either of these opposed extreme conditions, but some approximate to one, and others to the other. I am not aware that the respective results of these two extreme conditions have yet been put forward quite as forcibly as they admit and deserve to be.

¹ "Family Likeness in Eye-Colour," "Proc. Royal Soc.," 1886.

I will explain what I mean by rude but sufficient illustrations. Let us suppose a black population with a single white individual in it, and endeavour to trace the tints of his descendants under each of the two ideal conditions of completely blending and of mutually exclusive heritages. We will reduce the problem to its simplest form by assuming that intermarriage with the parent stock is the rule, and that there is no change in the vitality or the fertility of the hybrid offspring. It will be best to begin by supposing each pair to leave just two children to succeed them. Let us, for illustration sake, imagine a large number of similar glasses, each intended to represent a single individual, and the tint of their contents to represent those of the persons to whom they severally refer. In illustrating the effect of perfectly blending inheritance we have merely to mix a glass full of black fluid with a glass full of white fluid and to pour the mixture into two other glasses which represent the two children. That mixture will be of course the same in both, and of a pure mulatto tint. Repeating the process with each of the two glasses we obtain four glasses all of quadroon tint, then eight of octoroon tint, and so on. All this is plain enough; but now let us take the case of mutually exclusive heritages. I will represent the tint of each individual by a cylinder that just fills the glass. There will be a large number of glasses each filled with a black cylinder and one with a white cylinder. We will now treat their contents in the same outward form as before. We mix, that is, we throw and shake together in a separate jar the contents of the two glasses, namely, a white cylinder and a black cylinder, and then fill two other glasses from out of the jar. The contents of these two glasses will not be mulatto, but one of them will be pure white and the other pure black. We repeat the process and obtain four grand children, one of whom will still be of unmixed white and the other three of unmixed black; we repeat it again and obtain eight grandchildren, one of whom will be pure white and the other seven pure black, and so on for any number of generations, the one white cylinder appearing unchanged in every one of them.

It would be tedious and of little profit to endeavour to modify this rude but distinct illustration so as to apply to families of varying numbers of children. In some cases the offspring would fail and the race of the white cylinder would come altogether to an end, in others it would be prolific and increase. In all cases the broad fact remains conspicuous that when heritages are mutually exclusive a rare variety may have numerous chances of establishing itself, one in each of many successive generations. Until it is wholly abolished, it will present itself again and again for competitive examination without diminution of vigour, and if it has natural advantages over the general population it has a corresponding number of chances of profiting by them. The conditions are far different with the heritages that blend. In these cases the peculiarity of one parent is diluted to half its amount in the very first generation, so that under the most favourable supposition of the offspring of that parent mating together and never mixing their blood with outsiders, and of not suffering from this close interbreeding, they would only be mulatto. No more than one-half of the original peculiarity of the one black parent could possibly become an established characteristic.

It is between these two extreme conditions that the facts of inheritance really lie. They might be roughly illustrated by supposing each of the glasses to contain neither a volume of fluid nor yet a single cylinder, but a moderate number of large beads partly strung together as on a broken necklace, from which some fall off each time it is handled; but I will not pursue this illustration further. Suffice it to conclude that the establishment of a somewhat rare variety as that of white men naturally suited to thrive and multiply in tropical climates, is not so great an improbability as those anticipate, who lay exclusive stress on the tendency of rare peculiarities to disappear in a very few generations, through free intermarriage with the ordinary members of the original stock.

OBITUARY NOTICE OF THE LATE PROFESSOR BUSK.

By the death on the 10th of August last of Mr. George Busk the Institute has lost one of its oldest and most valued members.

He was born on the 12th of August, 1807, at St. Petersburg, being the second son of Mr. Robert Busk, an English merchant residing in that city. He early devoted himself to the study of surgery, entering as a pupil at the Medical School, which had at that time a considerable reputation, established in Aldersgate Street, near St. Bartholomew's Hospital. He became a member of the Royal College of Surgeons in 1830, and was elected an honorary fellow of that body in 1843. For many years he was Surgeon to the Seamen's Hospital established on board the *Dreadnought*, an old man-of-war moored off Greenwich, an office which he resigned in 1856. Although never in large practice, chiefly owing to the fortunate circumstance that he was not under the necessity of devoting himself to the drudgery of the profession, he acquired a considerable reputation as a scientific surgeon and made some important contributions to the advancement of surgical knowledge. It was, however, as a naturalist that he was best known to the world. His early predilection for microscopic research, and familiarity with the instrument at a time when it was in comparatively few hands, led him to select the lower forms of animal life, as the principal objects of his painstaking and accurate researches. The numerous memoirs which he published, especially upon the organization and classification of the polyzoa had already in 1856 made him so great a reputation that when in that year Sir Richard Owen resigned the Hunterian Professorship at the Royal College of Surgeons, which he had long held with great distinction, Mr. Busk was chosen by the Council of the College to succeed him. His strength, however, lay rather in investigation than in exposition, and his modest, retiring nature making public lecturing an uncongenial pursuit, after three years he resigned the chair. He did, however, admirable service to the college

for many years, as a Member of the Council and of the Board of Examiners, and in 1871 was chosen to serve in its highest office, that of President. He was also an examiner in the University of London and the Army Medical Board; for many years Secretary to the Linnean Society, a member of the Council and Vice-President of the Royal Society, a Member of the Council and Vice-President of the Zoological Society, a Member of the Council of the Geological Society, Treasurer of the Royal Institution, a Member of the Senate of the University of London, Trustee of the Hunterian Museum, and one of the Governors of Charterhouse School. The number and variety of these appointments show the esteem in which his sound judgment, wide knowledge, excellent common sense, unwearied industry, and sterling integrity of character were held by his friends and colleagues.

For his numerous and varied researches in zoology, physiology, and comparative anatomy, the Royal Society in 1871 awarded to Mr. Busk a Royal medal, and he also received the Lyell and Wollaston medals from the Geological Society for his labours in palæontology, mainly the description of mammalian remains found in caves. It is, however, chiefly his work in connection with anthropology, a subject to which he devoted much of his time in the later years of his life, that must be spoken of here. He was elected a member of the old Ethnological Society in 1863, and soon after became one of its Vice-Presidents. In the negotiations connected with the fusion of that society with the Anthropological, which resulted in the formation of the present Institute in 1871, he took a considerable part. Of this body he was a Member of the Council from its foundation until the advance of illness about a year before his death compelled him to cease from attending. In 1873 he was elected President, an office which he served for two years with great advantage to the Institute, having been most assiduous in the discharge of its duties.

Mr. Busk's taste for anthropology appears to have been first roused by the opportunities for its study afforded by the seamen of the most varied races and nationalities who became patients

at the Dreadnought Hospital; and a small collection of typical crania which he then formed, furnished the materials for commencing those investigations into the distinctive characters of the skulls of races, which will always be associated with his name. He was the first in this country who seriously attacked this difficult problem, and he expended a vast amount of careful observation and experiment in devising methods of measuring the external form and estimating the internal capacity of crania. Since he first took up this question, the science of craniometry has engaged the attention of numerous anatomists in all parts of the civilised world, and has made advances which naturally have left Busk's methods somewhat in the rear, but still the ingenuity of his modes of procedure, and the thoroughly scientific and conscientious spirit in which his investigations were carried on will never fail to meet their due recognition. A large work which he had for many years in hand, entitled "*Crania typica*," containing descriptions and carefully executed lithographic figures, either by his own hand or of that of one of his accomplished daughters, was never published; but the plates, as far as they were completed, have been deposited in the library of the Institute.

The following list of Mr. Busk's published memoirs in anthropological subjects will give some idea of the extent and scope of his researches in this branch of science.

1. "Observations on a Systematic Mode of Craniometry." "*Trans. Ethnol. Soc.*," I, 1861, p. 341.

2. Translation of Schaaffhausen, "*On the Crania of the most Ancient Races of Man*;" with remarks, and original figures, taken from a cast of the Neanderthal Cranium. "*Nat. Hist. Review*," 1861, pp. 155-176.

3. "Observations on some Skulls from Ceylon, said to be those of Veddahs." "*Linn. Soc. Journ.*," VI (Zool.), 1862, p. 166.

4. (With Carpenter and Falconer). "An account of the proceedings of the late Conference held in France to enquire into the circumstances attending the reported discovery of a

Human Jaw in the gravel at Moulin-Quignon, near Abbeville; including the *Procès Verbaux* of the sittings of the Conference, with notes thereon." "Nat. Hist. Review," 1863, pp. 423-462.

5. "Note on the Skeleton found at Bennet Hill, Elgin." "Journ. Anthrop. Soc.," II, 1864, pp. 9, 10.

6. "On a very Ancient Human Cranium from Gibraltar." "Brit. Assoc. Rep.," XXXIV, 1864 (Sect.), pp. 91, 92.

7. "Account of the Discovery of a Human Skeleton beneath a bed of peat on the coast of Cheshire." "Trans. Ethnol. Soc.," IV, 1866, p. 101.

8. "Description of two Andamanese Skulls." "Trans. Ethnol. Soc.," IV, 1866, p. 205.

9. "Description of an Aino Skull." "Trans. Ethnol. Soc.," VI, 1868, pp. 109-111.

10. "Description of, and Remarks upon, an Ancient Calvaria from China, which has been supposed to be that of Confucius." "Journ. Ethnol. Soc.," II, 1870, p. 73.

11. "Supplementary Remarks to a note on an Ancient Chinese Calva." "Journ. Ethnol. Soc.," II, 1870, p. 156.

12. "Remarks on a Collection of Skulls from Rothwell, in Northamptonshire." "Proceedings Ethnol. Soc.," 1870, p. xci. [In "Journ. Anthrop. Inst.," I, 1872, Appendix.]

13. (With W. Boyd Dawkins). "On the Discovery of Platycnemic Men in Denbighshire." "Brit. Assoc. Rep.," XL, 1870 (Sect.), p. 148.

14. "Note on a ready method of Measuring the Cubic Capacity of Skulls." "Journ. Anthrop. Inst.," III, 1874, p. 200.

15. "Remarks on a Collection of 150 Ancient Peruvian Skulls, presented to the Anthropological Institute by T. J. Hutchinson." "Journ. Anthrop. Inst.," III, 1874, p. 86.

16. "Description of a Samoiede Skull in the Museum of the Royal College of Surgeons." "Journ. Anthrop. Inst.," III, 1874, p. 494.

17. "Notes on some Skulls from Palmyra, presented to the Institute by the late Mr. Cottesworth." "Journ. Anthrop. Inst.," IV, 1874, p. 366.

18. "Presidential Address to the Anthropological Institute." "Journ. Anthropol. Inst.," III, 1874, p. 499.

19. "Presidential Address to the Anthropological Institute." "Journ. Anthropol. Inst.," IV, 1875, p. 469.

20. "Notice of a Skull from Ashantee, and supposed to be that of a Chief or Superior Officer." "Journ. Anthropol. Inst.," IV, 1875, p. 62.

21. "Description of two Beothuc Skulls." "Journ. Anthropol. Inst.," V, 1876, p. 230.

22. "Notes on a Collection of Skulls from the Islands of Mallicollo and Vanikoro in the New Hebrides Group." "Journ. Anthropol. Inst.," VI, 1877, p. 200.

W. H. F.

The following resolution was moved by Professor MOSELEY, seconded by Mr. HYDE CLARKE, supported by Professor FLOWER, and carried unanimously; namely,

"That the thanks of the meeting be given to the President for his Address, and that it be printed in the Journal of the Institute."

The Scrutineers gave in their Report and the following gentlemen were declared to be duly elected to serve as Officers and Council for the year 1887:—

President.—Francis Galton, Esq., M.A., F.R.S.

Vice-Presidents.—Hyde Clarke, Esq.; J. G. Garson, Esq., M.D.; Prof. A. H. Keane, B.A.

Secretary.—F. W. Rudler, Esq., F.G.S.

Treasurer.—A. L. Lewis, Esq., F.C.A.

Council.—G. M. Atkinson, Esq.; Sir W. Bowman, Bart.; E. W. Brabrook, Esq., F.S.A.; Sir George Campbell, M.P.; C. H. E. Carmichael, Esq., M.A.; A. W. Franks, Esq., M.A., F.R.S.; Lieut.-Col. H. H. Godwin-Austen, F.R.S.; Col. J. A. Grant, C.B.; T. V. Holmes, Esq., F.G.S.; Prof. A. Macalister, F.R.S.; R. Biddulph Martin, Esq., M.P.; Prof. Meldola, F.R.S.; Prof. Moseley, F.R.S.; C. Peek, Esq., M.A.; F. G. H. Price, Esq.,

F.S.A.; Charles H. Read, Esq., F.S.A.; Lord Arthur Russell, M.P.; H. Seebohm, Esq., F.L.S.; Prof. G. D. Thane; M. J. Walhouse, Esq., F.R.A.S.

A vote of thanks to the retiring Treasurer, retiring Vice-President, retiring Councillors, the Auditors, and the Scrutineers, was moved by Prof. KEANE, seconded by Dr. GARSON, and carried unanimously.

ANTHROPOLOGICAL MISCELLANEA.

SKETCH of NGUNA GRAMMAR.

By SIDNEY H. RAY.

NGUNA is a small island in the New Hebrides, situated to the north of Faté, in $18^{\circ} 34'$ S. lat., and $168^{\circ} 20'$ E. long. It was discovered in 1774 by Captain Cook, and by him called Montagu Island. The population of the island is about 1,000. European missionaries have been established there since 1870.

The following sketch was drawn up for comparison with Dr. Codrington's "*Melanesian Languages*."¹ It is founded on translations of the Gospels of S. Matthew and S. John, published in 1882.²

According to Dr. Steel,³ the Nguna dialect is understood on thirteen islands, viz., Nguna, Faté, Pele, Mau, Metaso, Makuru, Tongoa, Tongariki, Falea, Buniga, Ewosi, Mai, and Api.

§ 1. ALPHABET.

1. Vowels: a, e, i, o, u.

2. Consonants: k, g; t; p, v, \tilde{p} , w; m, \tilde{m} , n; r; s.

3. Diphthong: au.

4. Two sounds are probably represented by g, viz., the ng in sing, and ng=ngg in finger. In the alphabet of the Melanesian mission the first is written n, and the second g. In a short specimen of Nguna given by Dr. Codrington he writes g for g in the words naga, ega, go, gani, rogo.

\tilde{p} is the Melanesian q=kpw (in Faté pw, kw). Nguna, *patoko*, body; *pō*, heart, are the Faté *qatoko*, *go*; q is here used instead of the \tilde{p} of the gospels; \tilde{m} is the Melanesian m=mw, sometimes = tr.

The other consonants as in English, vowels as in Italian.

5. The letter changes so common in Sesake and Faté, occur also in Nguna. k changes to g, p to v, q to w, r to t, as in *ganikani*, to eat; *paki*, *vaki*, to go in; *qia*, *wia*, good; *rolu*, *tolu*, three.

¹ "*The Melanesian Languages*," by R. H. Codrington, D.D., Oxford, 1885.

² "*The Gospels according to Matthew and John, translated into the language of Nguna, New Hebrides*," London, 1882.

³ "*The New Hebrides*," by Robert Steel, D.D., London, 1880.

§ 2. ARTICLE.

The demonstrative is *na*, or *n-* before a vowel; *na tamoli*, a man; *na wota*, a chief; *n-ata*, a spirit; *n-oi*, water.

The demonstrative *waina* has frequently the sense of the definite article, *natamoli waina*, man that, or the man.

There seems to be a personal article *ki* (*i* of the Banks Is. and N. New Hebrides). It is most commonly used with the personal pronouns and after the verb *soso*, to call; *eu soso gilana ki Maria*, they call his mother Mary; *cuga wo soso ko ki Keva*, they shall call thee Cephas.

§ 3. NOUNS.

1. There are two classes of Nouns. The first takes the suffixed possessive pronouns, the second does not. Names of things in close connection with the possessor, such as parts of the body, and relations, belong to the first class, as do also nouns used as prepositions. Names of other objects belong to the second class.

Examples: *na rugu*, my hand; *taima*, thy brother; *gilana*, his mother; *qogomu*, your hearts; *naraegu*, before me, i.e., my before; *na suma aneana*, the house his possession, his house; *na wota anigo*, thy chief.

2. There is no independent form of the first class of nouns as in Mota. Verbal substantives are formed by a suffix *-ana*; *tagi*, to weep; *tagiana*, a weeping; *mari*, to do; *mariana*, a deed.

3. Personal substantives are formed from verbs and adjectives, by the indefinite pronoun, *tea*, one; *tea tavagi*, a builder; *tea vasapiseiki*, a teacher; *tea tatago*, one who asks, a beggar; *tea mari*, a maker. With the verbal substantive *tea* has a passive signification; *tea vasapiseikiana*, one taught, a disciple; *tea roromiana*, a beloved one. See § 7.

4. Names of places are formed with *malo* (Florida, *malei*); *malo tasake*, a seat, from *tasake*, to sit; *malo garagara*, a dry place, beach, from *garagara*, dry.

5. Gender is distinguished by the words *noai*, male, and *goroi*, female; *na wota*, a chief; *na wota na goroi*, a female chief; *natuna na noai*, a son; *natuna nagoroi*, a daughter.

6. Plurality is denoted by *maga*, or *lapa* (Faté, *laba*) following the noun; *taina maga*, his brothers; *tea mitiri maga*, writers; *na mariana lapa*, doings; *na pua lapa*, paths. "The whole" is expressed by *mamau*, (Faté, *mau*) or *puti*; *na tokoana mamau*, the whole city; *na rata mamau* the whole herd; *na vanua wanogoe mamau puti*, all that land; *eu pei nara mau*, they were alone, lit, they were all themselves.

7. Juxtaposition of two nouns gives a genitive character to

the first; *Maria anawota*, Mary's husband; *Tavita natuna*, David's son; *na suma nasaisaiana*, the assemblage of the house. The preposition *ni* is also used; *natu ni Tavita*, son of David, *ara ni nakau*, branch of a tree.

8. The words *wota*, husband; *goroi*, wife, take a prefix varying with the person of the possessor; *amagoroi*, *anagoroi*, *amugoroi*, thy, his, your wife; *amawota*, *anawota*, thy, her husband.

9. A few nouns are met with having the prefix *vei*; *na veinawotaana*, authority; *na veileperoana*, leprosy. Here *vei* expresses a state or condition, and is probably the same as the verb *vei pei*, to be.

10. A suffix *ri*, which may perhaps denote companionship, is seen in *taguri*, *tanari*, *tagitari*, *tarari*, my, his, our, their friend; *tea loiaia e pei Natugu roromiana aginau ri*, this is my son, the beloved one my possession.

§ 4. PRONOUNS.

1. The personal pronouns are:—

Singular, 1. *kinau*; 2. *nigo*; 3. *nae*.

Dual and plural, 1. inclusive of the person addressed, *nigita*, exclusive of the person addressed, *kinami*; 2. *nimu*; 3. *nara*.

Ni, *na* are demonstrative prefixes as in Sesake.

The dual is distinguished from the plural by a different verbal particle, or by the addition of the numeral *rua*, two.

Where a singular pronoun and a noun are used in English, the Nguna idiom requires a dual pronoun; *e pilosi gami ma mama*, he hates me and the father, she hates us, the companion, the father; *kinami ma mama aro pei tea sikai mau*, I and the father are one; *nara ma Suge ero rua roko*, he with God abode, they, the companion God, they two abode.

2. The personal pronouns suffixed to verbs and prepositions are:—

Singular: 1. *-au*, *-nau*; 2. *ko*, *go*; 3. *-a*, *-nia*.

Dual and Plural: 1. inclusive *-gita*, exclusive *-gami*; 2. *-mu*; 3. *-ra*.

The forms *-nau*, *-nia*, are used only after the verbal suffix or preposition *ki*. The *n* or *ni* is introduced for euphony as in Oba.

Examples of verbs: *kinau a pei vaini*, *nimu ku pei aragu maga*, I am the vine, you are my branches; *kinami au atae*, we know; *nigita ma tuga vano*, we also go; *kinami aro atae*, we two know; *nara euga soso ko*, they call thee; *a soso mu*, I call you; *ku punusi au*, ye see me; *ku noakinau*, ye tell me; *e pituakinia*, he brings him.

3. The possessive pronouns suffixed to nouns are:

Singular: 1. *-gu*; 2. *-ma*; 3. *-na*.

Dual and plural: 1. inclusive -*gita*, exclusive -*gami*, -*ginami*; 2. -*mu*; 3. -*ra*.

Examples: *Narugu*, my hand; *naruma*, thy hand; *naruna*, his hand; *natugami*, our son; *mamaginami*, our father; *qatokomu*, your body; *namatara*, their eyes.

Some verbs and prepositions take this pronoun suffixed rather than the one which properly belongs to them (as in Florida, and Sesake); *eu masaua*, they desire it; *kiagu*, from you; *kiana*, from him.

4. The interrogative pronouns are *Sei*? who? *na sava*? what? *seve*? which? *sa*? what thing? They are used as nouns.

Sei e pei tete aginau? who is my mother? *auga wo peani nasa*? we shall have the what? *ku masau nasava*? thou desirest what? *ku laga sei*? thou seekest whom? *seve tea maga*? which ones?

5. Demonstrative pronouns: *tea waia*, this; *tea waina*, that; *tea wanogoe*, that; *nogo*, *nogoe*, that; *tea maga*, these, those. These are used also in the place of relatives.

6. Indefinite pronouns: *tea*, one, anyone; *tea sikai*, one; *tea gota*, another; *tea lapa*, many; *seara*, some; *tea mamau puti*, all, every one; *sikasikai*, each; *te nata*, no man; *sa*, what; *pisa*, few.

§ 5. POSSESSIVES.

1. The words *a* and *ma* are used as equivalent to the possessives of other Melanesian tongues, and are used with the second class of nouns instead of the possessive pronouns. With suffixed pronouns they appear as follows:

Singular: 1. *aginau*; 2. *anigo*; 3. *aneana*.

Dual and plural: 1. inclusive *anigita*; exclusive *aginami*; 2. *animu*; 3. *areara*.

Singular: 1. *maginau*; 2. *manigo*; 3. *maneana*.

Dual and plural: 1. inclusive *manigita*; exclusive *maginami*; 2. *manimu*; 3. *marcara*. With nouns *a* is used in the sense of my possession, thy possession, &c., whilst *ma* is used with verbs and means a thing for me, for thee, &c.

With nouns the forms are *agi*, and *magi*.

Examples: *Nasuma aginau*, the house my possession; *na ranua aneana*, the field his possession; *na sulu aginami*, the torches our possession; *ku maginau mari a*, ye for me did it; *e manigo mari nasava*, he for thee did the what? *e ta maginau umai mau*, *ma e manimu umai*, not for me it came, but for you it came; *agi Mosesa sikai*, a thing for Moses one; *ku wo magi natamu pagai na maromaroana*, ye shall for them your souls find rest; *qa maginami qolagati*, open for us.

§ 6. ADJECTIVES.

1. Demonstrative: *Waia*, *waina*, *wanogoe*, *wanae*, *wanana*. *Kana o waia*, this fellow; *na manumatua waina*, this wisdom; *aura wanogoe*, that hour; *tokora wanana*, yonder place; *tea suasua paroro wanae*, that unprofitable servant.

2. Indefinite: *Te*, any; *sarasara*, each; *tapalana*, such; *sikesikai*, each; *sara*, all, every; *kerua*, another, *sikaimau*, one only. *Te natamoli*, any man; *sarasara ra*, each of them; *navaivaiana maga tapalana*, such signs; *e atae sara natamoli*, he knows every man; *taleva kerua*, the other side.

3. Comparison is made by the verb *liu*, to pass, or by two positive statements; *e qarua liu tea mamau puti*, he is greater than all; *namauriana e ta qarua liu navinaga kite?* is not life greater than food? *e sa liu*, it is worse; *na varatiana ni navanua ni Sotoma ega wo kiki, ma na varatiana anigo ega wo qarua*, the punishment of the town of Sodom shall be small, but your punishment shall be great.

4. The word *siki*, alone, only, (connected with the numeral *sikai*, one) is a noun and takes the suffixed pronouns.

Singular: *siki-gu*, *-ma*, *-na*.

Plural: *siki-gita*, *-gami*, *-mu*, *-ra*.

Nae e sikina, he was alone, lit., he was his only; *a ta sikigu mau*, I am not alone, I am not my only; *mama e sikina atae a*, the father alone knows it; *a ta magi nara waia sikira tapasavasi mau*, I do not pray for these only.

A few simple adjectives are found, such as *wia*, good; *warua*, large; *sa*, bad; *kiki*, small; *vanu*, new; *pura*, full.

The prefixes of condition *ma* and *ta*, are seen in *makalikali*, prickly; *matulu*, deep; *malari*, cold; *tagolaga*, opened; *tagele*, unjust; *taperavera*, scattered; *tagotae*, divided.

An adjectival termination *a* appears in *ulu*, growing, from *ulu*, a blade of grass; *turua*, trembling, from *ruru*, a trembling; *goa*, stinking, from *go*, a smell. A termination *ta* may perhaps occur also in *matagauta*, thorny, from *tagau*, a hook.

§ 7. VERBS.

1. Verbs are distinguished from other parts of speech by verbal particles. Those in common use are:

Singular: 1. *a*; 2. *ku*; 3. *e*.

Dual: 1. inclusive *toro*, exclusive *aro*; 2. *koro*; 3. *ero*.

Plural: 1. inclusive *tu*, exclusive *au*; 2. *ku*; 3. *eu*.

These particles are used with or without the personal pronouns, and frequently have added the directive adverb, *ga*.

Examples: *A noaki mu*, I tell you; *ku tua au taleneta lima*, thou gavest me five talents; *nae e pasatara*, he answered; *aro*

munu atae, we two can drink; *koro ratago*, ye two ask; *ero noakinia*, they two say to him; *kinami au lotu*, we worship; *tu sake paki Yerusalem*, we go up to Jerusalem; *nimu ku noa*, ye say; *eu rumai punusi a*, they came to him.

2. The sign of quotation is *naga*, used with a particle as though a verb; *ku noa wia*, *ku naga*, a *ta peani nanoai mau*, thou sayest well, I have no husband; *ku ratagovi au naga qa munu*, ye ask me give drink; *nigo ku atae naga a roromi ko*, thou knowest that I love thee.

3. A conditional mood is expressed by the conjunction *pe*, if, joined to the verbal particle; *te nata epe maginau suasua*, *ega tautau au*, if any man serves me he follows me; *kupe tatagovi mama te navatuna*, *epe wo tua mu*, if ye ask the father anything, he will give it to you.

4. The imperative is shown by the auxiliary *qa*, come or go; *qa leo*, look; *qa tautau au*, follow me. In the dual and plural the verbal particles, *koroga*, *kuga*, are more commonly used; *koroga paki na tokoana*, go ye two into the city; *kuga veresi a*, loose him.

5. The potential is expressed by the verb *atae*, to know, or *mari atae*, to know how, used after the principal verb. *Ku mari atae mari au ape tautau*, thou canst make me clean; *aro munu atae*, we two are able to drink, *eu mari atae susuwe*, they can mourn. Inability is expressed by *mari sa*; *ku mari sa*, ye cannot; *a mari sa tautau ko*, I cannot follow thee. The word *sago* has the same meaning; *natamoli eu mari sago tea wanogoe*, men cannot do this.

The verb *one*, to lie, used impersonally with another verb, expresses necessity; *nara ma e one au one naga aga viragi ra*, them also I must bring, or, they also, it is necessary for me that I bring them; *e one mu one naga kuga vakilina pau*, ye must be born anew.

6. A passive voice is formed by *tea* and the verbal noun, *kuga wo pri tea veresiana*, ye shall be free, lit., ye shall be a thing of freeing.

7. The infinitive usually takes the form of a direct statement; *e mari namatoma ero leo*, he made thine eyes, they two see.

8. Tense. The verbal particles are indefinite in time. A definite past is denoted by the adverb *sua*, already. *Elia e po pano sua umai*, Elias has already come hither; *e po mate sua*, he was dead already. The future sign is *wo*; *euga wo pituaki mu*, they shall give you up; *aga wo noa*, I will say. The verb *to*, to stand, makes a kind of imperfect tense; *e to mitoaki nia*, he was thinking, or, he stood thinking it; *e to liu ra pano*, he was passing them. In the same way *po*, to make, forms a perfect; *ku po punusi au*, ye have seen me; *eu po puluti namatara*, they

have shut their eyes. The English yet, still, till now, is expressed by *ko*; *a ko paqai mau*, I have not yet found; *ragi waina naleatia e ko toko*, while day still remains; *a ko tika nasava?* what lack I yet?

9. Prefixes. The causative prefix *vaka*, *paka*, is seen in *pakamauri*, to quicken, make alive; *vakavura*, to fulfil; *pakasa*, to disfigure, make bad. A shorter form *va* or *pa* is also used; *vautu*, to cause, to flow, to draw; *vagani*, to feed; *paratu*, to trust, put a stone; *vamawota*, to open. The verb *mari*, to do often, takes the place of *vaka*; *maripauri*, to make new, to heal; *marimata*, to make ready, to prepare. For the prefixes of condition *ma* and *ta*, see § 6.

10. Suffixes. As in other Melanesian languages, an intransitive verb is made transitive, or a transitive verb has its action determined upon some definite object by means of a suffix. In Nguna, the suffixes found are *i*, *gi*, *ki*, *li*, *mi*, *ni*, *ri*, *si*, *ti*, and *vi*.

Examples: *munu*, to drink; *koroga wo munugi a*, ye shall drink it; *sua*, to fall; *suai natano*, to fall on the ground; *noa*, to say; *noaki*, to tell; *va*, to go; *vagi*, to go into; *puoli*, to pass away; *roromi*, to love; *su*, to clothe; *sunu*, to dress; *maripauri*, to make well; *tagi*, to weep; *tagisi natuna*, to weep for a child; *laga*, to shine; *lagati*, to lighten; *tatago*, to ask; *tatagovi*, to ask for anything. It is not always easy to distinguish the suffix *ki* from the preposition of motion *ki*, to or from. It is, however, plainly seen to be a suffix in verbal nouns such as *natikiana*, a casting; *namitoakiana*, a thinking.

11. Many adverbs are used to form compound verbs. Such adverbs are *goro*, against; *lua*, out, off; *roa*, backwards; *soki*, carefully.

Examples: *pasagoro*, to speak against, deny; *logoro*, to look at, watch; *tugoro*, to stand against, resist; *sailua*, to draw out; *taelua*, to cut off; *tapelua*, to take out; *mitoakiroa*, to think back, repent; *mataroa*, to look back, to choose; *loroa*, to reject; *leosoki*, to look steadily at; *pasasoki*, to say carefully, to betroth; *noasokisoki*, to bear witness, to speak carefully.

12. The negative verb is *ti*, usually in the form *tika*, with the demonstrative adverb; *e tika*, there is not; *eu tika waini*, they have no wine; *a ko tika nasava?* what lack I?

13. An interrogative verb is formed by *sa?* what? *kinami auga kasa kinia?* what have we to do with it? we what it? *aga kasa?* what do I? The adverb, *kite*, or, at the end of a sentence makes it interrogative; *ku roromi au kite?* lovest thou me? *nimu ma ku pei teavilasuruweana kite?* are ye also led astray?

14. The verb "to be" is *pei*: *na vanua e pei maramana*, the field is the world. "To be" in the sense of dwelling, living, staying in anything is *toko*; *na maramana waina e toko ako toko*,

the light that is in thee; *e toko au toko*, he abides in me; *a toko asa toko*, I abide in him; *nae e toko sava?* where does he live?

15. A reflex action is expressed by means of the noun, *tuāma*, self, and the possessive pronouns.

Singular: 1. *tuāma*, -*ma*, -*na*.

Plural: 1. inclusive *tuāmagita*, -*gami*, -*mu*, -*ra*.

Kuga tuāmau roromi mu, love one another, ye yourselves love you; *eu tuāara noaki ra*, they said to one another.

§ 8. ADVERBS.

1. Directives: *umai*, hither; *vano*, *pano*, thither; *sake*, *sike*, upward; *siwo*, downwards; *kopu*, inwards; *clau*, seaward; *euta*, landward.

2. Interrogative: *seve ragi?* when, how long? *wai?* where? *seve tokora?* where? *e sava?* whither? *ekasana?* why? *tapale sava?* how? like what?

3. Time: *ragi waia*, now; *ragi waina*, then, while, as; *pea*, formerly; *ragi etaku*, afterwards; *sua*, already; *tuai*, of old; *sara nagogi*, always, every day; *moro*, again; *masoso*, to-day; *matamai*, to-morrow; *nanova*, yesterday; *pakalapa*, often.

4. Place: *nea*, here; *tokora waina*, here, this place; *tokora wanogoe*, that place, there; *e*, there; *pea*, in front; *e taku*, last behind; *tila* (noun) out; *uwea*, far away; *katama* (noun) outside, *e lagi*, from the east; *etano*, from the west.

5. Manner: *tapala waina*, as, so, like this; *mōli*, for no reason; *mau*, only, at all, used at end of sentence for emphasis; *ta*, not; *me*, also; *tapale nogoe*, so, thus; *alagoro*, about, nearly; *usuraki*, entirely, thoroughly.

Examples: *ga umai*, come hither; *ga vano*, go thither; *tuga sake*, let us go up; *eu mamau paki kopu punusi navitauriana*, they all went in together to see the marriage; *nara wai?* where are they? *ku atae au tapale sava?* how dost thou know me? *ekasana koro tuāmau pasa paki mu?* why do ye two talk to one another? *a ta atae a mau*, I do not know; *nae me umai*, he also came; *e alagoro pei paune ponotia sikai*, it was about a hundred pound weight; *eu pakalapa mamau paki asa*, they often went together to that (place).

6. Adjectives are often used as adverbs; *warua*, great; *tea maramara e maga qarua*, the governor wondered greatly.

§ 9. PREPOSITIONS.

1. Simple. Locative, *a*, at, in; *a Petania*, at Bethany; *a Tairo*, in Tyre; *a sa*, at that, there, and by a Melanesian idiom, from; *au atae tokora waina e pae asa umai*, we know the place he comes from that hither. With the pronouns suffixed, *au*,

ako, asa, ara, this preposition has almost the force of a relative pronoun and refers to something mentioned before: *a noaki sua asa*, I told you thereof; *e pasa asa*, he speaks of that; *kinau a noaki mu ara*, I told you of them; *na maramana waina e toko ako toko*, the light which abides at you; *a melu ako*, I came from thee.

Instrumental, *ki*, with; *e puri na virina ki naio*, he pierced his side with a spear; *kinau a to papetaiso ki noai*, I am baptizing with water. Also of motion, *ki tea mate*, from the dead ones.

Genitive, *ni*, of; *nawoka ni natamoli*, the mouth of a man.

2. Nouns. Many words used as prepositions are plainly seen to be nouns. Such are: *na rae*, the front; *narigi*, the side; *na taku*, the hinder part; *nawoka*, the opening, mouth, inside; *kaka*, among, of; *oli*, for, the stead; *lo*, the sake; *na qalau*, the inside. Many of them take the suffixed pronouns: *tea lapa kakara*, many among them; *natowoana kakana*, the falling of it; *narae ni natamoli*, before men; *e umai paki natakuna*, he came after him, he came into his after; *naleo kakama sikai*, one of thy things; *oli tamana*, instead of his father; *narigi napuu*, by the side of the way; *nawoka ni lasa*, under a vessel, the under of the vessel; *nalo nagisagu*, for the sake of my name.

3. Verbs. Many verbs are used as prepositions: *punusi*, to see, to; *paki*, to go, to; *pae*, to come, from; *kia*, away from; *sikoti*, with; *pa pa pa pa*, until; *kuga umai punusi au*, come to me; *paki na tasi*, into the sea; *e pae nara ni Apela pa pa pa pa nara ni Sakaria*, from the blood of Abel until the blood of Zachariah; *e tapelua e kiagu*, he takes it from me; *Petero me sikoti ra*, Peter also was with them.

§ 10. CONJUNCTIONS.

Copulative, *go*, and. Disjunctive, *kite*, or, used also at the end of a sentence in asking a question. Conditional, *pe*, if, joined to the verbal particle. There are also *na lakena*, because, for, the reason, (a noun); *ma*, a companion, used with person's names; *naga*, that, used as a verb and introducing a dependent sentence or a quotation; and *tea waina*, therefore.

Examples; *a noaki sikai, a naga, qa vano, go e pano*, I tell one, I thus go, and he goes; *kinami ma mama, I and the father; mama e tumana roromi mu, nalakena waiia, nimu ku po roromi au*, the father himself loves you, the reason this, ye have loved me.

The verb *po* often serves as a conjunction; *Tea waina e pano, po parano, po leo umai*, he went away, and washed and seeing came.

§ 11. NUMERALS.

1. Cardinals: *sikai*, one; *rua*, two; *tolu*, three; *pati*, four; *lima*, five; *latesa*, six; *larua*, seven; *latolu*, eight; *loveti*, nine; *rualima*, ten; *tamate*, the unit above ten; *rualima tamate sikai*, eleven; *rualima sikai tamate rua*, twelve; *rualima rua*, twenty; *rualima tolu*, thirty, &c.; *ponotia sikai*, one hundred; *takuna*, the unit above a hundred; *ponotia sikai rualima takuna lima tamate tolu*, one hundred and fifty three; *ponotia rua*, two hundred; *manu sikai*, one thousand; *tivilia*, ten thousand; *pisa*? how many?

Ordinals are formed by prefixing *ke* to the cardinals; *kerua*, second; *kerualima sikai tamate rua*, twelfth.

Multiplicatives take the causative prefix *vaka*: *vaka sikai*, once; *vaka rua*, twice; *vaka lapa*, many times; *vaka pisa*? how many times?

Distributives are formed with a conjunction: *sikai go sikai*, one by one.

§ 12. EXCLAMATIONS.

Ee! No; *Io*! yea; *Ai*! woe; *O*, vocative after the noun, *mama-ginami o*, *O*, our father!

THE NATIONALITIES OF THE UNITED KINGDOM.

Extracts from letters to the "Times."

By Sir JOHN LUBBOCK, Bart., M.P., F.R.S.

Revised by the Author.

I OBSERVE that the supporters of Home Rule place in the forefront of their argument the assertion that "we have within the compass of the United Kingdom no less than four real nationalities." By this I do not suppose that allusion is meant to the modern and, so to say, accidental divisions between England and Scotland in the first place, England and Wales in the second, or to the silver streak between Britain and Ireland, for we are hardly so degenerate as to reverse our old boast and allow the waves to rule Britannia. At any rate, thousands of those who listen to, or read, these statements understand them to mean that there are actually separate races in England, Scotland, and Ireland respectively; in fact, the addition of the adjective "real" is, of course, intended to give emphasis to the declaration, which is indeed almost unmeaning, unless it implies that there are in the United Kingdom four distinct races. It is, therefore, worth while to inquire what the facts really are.

As regards South Britain, it will be generally admitted that, omitting the question of pre-Celtic races (probably a more important factor in our population than is generally recognised), Wales and Cornwall are predominantly Celtic; that the south and

east are predominantly Anglo-Saxon, with a considerable Norman intermixture; that certain districts are mainly Scandinavian; in fact, that our population is built up of three principal elements—Celtic, Saxon, and Scandinavian.

In Ireland the population of the east and north is mainly Saxon, in the north-west Celtic, while in the extreme south-west the basis is Iberian, akin to the population of parts of Spain. Very many of those who imagine themselves to be Celts, and the natural foes of the Sassenach, are descendants of English colonists, even in Munster and Connaught. The Parnells, Grays, Moores, Burkes, Fitzgeralds, Barrys, Butlers, &c., are Anglo-Norman.

I pass to North Britain. Here we are met at once by the curious fact that the Saxons entered Caledonia if not before, at any rate about the same time as the Scots. In fact the Scots were an Irish tribe. "Ireland," says Bede, "was the original country of the Scots,"—"Ibernia propria Scotorum est patria." "Scotia was originally Ireland," said Bozius,—"Scotia, quæ tum erat Ibernia." The Scotch came from Ireland, says Marianus, "Scotus de Ibernia insula natus." Ireland, says Chalmers in his great work, was "known at the end of the third century as the native country of the Scots, and in after ages by the name of Scotland; this appellation was afterwards transferred from Ireland to Scotland;" and he asserts, as the result of all his enquiries, that no permanent settlement of the Scotch in Caledonia took place till towards the close of the sixth century.

In fact, down to the middle ages, if a person was called a Scot it was meant that he was born in Ireland. I must not overwhelm you with quotations, but, having given several of the earliest authorities, perhaps you will allow me to quote two of the latest. Mr. Bonwick says, "the real Scotia was Ireland, whose name got transferred to North Britain;" and Mr. Taylor, in "Words and Places," remarks that "the Scots, this conquering Irish sept, which appears to have actually colonised only a part of Argyle, succeeded in bestowing its name on the whole country." Argyle is indeed the country of the Gael, or Irishman. In the north of Scotland, the Orkneys and Shetlands, the population is mainly Scandinavian, Sutherland being so named as the southern portion of their territory. In the east and south the population is mainly Saxon. Edinburgh is a Saxon city, built by Edwin, King of Northumbria, and called after him.

Of the great Scotch families, the Baliols are named or came from Bailleul or Baliol in Normandy, the Bruces from Yorkshire, the Stewarts from Shropshire, the Hamiltons from Hambleton in Buckinghamshire, the Lindsays from Lindsay in Essex, the Sinclairs from St. Clair in Normandy, the Comyns from Comines in Flanders, the Camerons, according to some authorities, from Cambronne. Some even of the Highland clans are Teutonic. "The Gordons," says MacLaughlan, "the Frasers, the Chisholms, &c., are without any trace of a connexion with the Celts, and originally without doubt, of purely Teutonic blood." So are the MacLaughlans, while

the Kennedys, Macdonalds, and Munroes are Irish, and the Elliotts, Frazers, Maxwells, Mathesons, and Keiths English.

"The great heroes of Scottish history," says Bonwick, "Bruce and Wallace, were of English origin." The Lothians, says Hume, were "entirely peopled with Saxons."

Thus, then, in Scotland, as in England, the east is mainly Teutonic, the west mainly Celtic.

Huxley and Beddoe have both pointed out, and it will be generally admitted, that the people north and south of the line dividing England and Scotland are practically identical. On the other hand, so far from Scotland being inhabited by a single homogeneous people, the struggle between the east and west was bitter and prolonged. The Wolf of Badenoch with his Highlanders burnt Elgin in 1390; and, says Burton, "it will be difficult to make those not familiar with the tone of feeling in Lowland Scotland at that time believe that the defeat of Donald of the Isles (at Harlaw) was felt as a more memorable deliverance even than that of Bannockburn."

I maintain, therefore, that the defence of Home Rule, on the ground that there are four "real nationalities" in our islands is entirely without foundation. If, however, we are to be divided at all according to blood, the divisions would not be into England, Scotland, Ireland, and Wales. The main division in Great Britain would be not from east to west, but from north to south; the Saxon division would include the greater portion of the east of England, the east of Ireland and of Scotland; the Celtic division would comprise most of the west of Ireland and west of Scotland, with Cornwall and most of Wales; the Scandinavian the north of Scotland, several maritime districts on the east, Westmoreland, Cumberland, and Pembroke, while the extreme south-west of Ireland, and part of Wales, would be Iberian. The exact limits would give rise to an endless number of bitter disputes. Indeed, so much intermingled are the different races that one of our highest authorities, Dr. Beddoe, after careful and prolonged study, says:—"With respect to the distribution and commixture of race elements in the British Isles, we may safely assert that not one of them, whether Iberian, Gaelic, Cymric, Saxon, or Scandinavian, is peculiar to, or absent from, or anywhere predominant in, any one of the three kingdoms."

If we recognise the undeniable ethnological fact that English, Irish, and Scotch are all composed of the same elements, and in not very dissimilar proportions, it would do much to mitigate our unfortunate dissensions and add to the strength and welfare of our common country.

Professor Bryce having called in question some of the foregoing statements, the following reply was published:—

The points on which he contradicts my statements are (1) the origin of Sir W. Wallace; (2) the origin of the Braces; (3) that Argyle was called after the Gaels; (4) that the Saxons were

in Scotland before the Scots; (5) that Sutherland was so named from its relation to the Scandinavian settlements in the Orkneys and Shetlands, and one or two minor points.

As regards the first point, Mr. Bryce asserts that Wallace "was not an Englishman, but, if we are to go by his name at all, a Welshman." But what says Chalmers? "The original country," he states, "of this great man's family is idly supposed to be Wales; but his progenitors were undoubtedly an Anglo-Norman family." . . . "The Scottish antiquaries suppose," he adds, "the families of Wallace and Valoines, who both came from England into Scotland, to have been the same; but that these two families were distinct is apparent."

"Wallace," says Bonwick, "was descended from Waleys, or Waleuse, of English-Norman family, who left England to settle under the Stewarts of Renfrew. . . . Sir W. Wallace came forward as the advocate of the independence of Anglo-Norman rule in Scotland. . . . The Celtic Scotchmen took no manner of interest in the question, for Wallace represented the party of Anglo-Scots that had virtually triumphed over the real Irish-Scots and Caledonians."

With reference to Mr. Bryce's second point. I quoted Mr. Bonwick's statement that "Bruce was of English origin." He was, in fact, descended from Robert de Bruis, "who," says Chalmers, "was an opulent baron in Yorkshire at the epoch of the Domesday Book." I do not doubt that the family are originally Scandinavian, but this does not affect the question.

Thirdly, Mr. Bryce asserts that "the name Argyle had nothing to do with the Gael." "The old Scotch form of Argyle," says Skene, "is *Earrgaoidheal*, from '*earr*,' a limit or boundary, and this approaches most nearly to the form of the name in the old descriptions, with its etymology of margin or limit of the Gael."

"Argyle," says Chalmers, "signified merely the limit or boundary of the Irishmen or Gael."

"Here also," says Rhys, in his *Celtic Britain*, "may be mentioned Argyle, as it is found variously called *Oirir Gaithel*, *Airir Gaithel*, and *Arregaethel*, meaning the region belonging to the Goidels or Gaelic speaking people."

"The name Gael," says Taylor in "Words and Places," was used "as a national appellation by the Gaels of Caledonia and the Gauls of Gallia. Galway, Donegal, Galloway, and Argyle are Gaelic districts." "Northern Argyle," says Robertson, "was that portion of the territories of the Oirir-Gael which reached from the northern boundaries of the modern county to the frontiers of the Gall-Gael," and in his map the district is marked as *Oirir-Gael*.

Fourthly, Professor Bryce asserts that the Saxons were not in Scotland before the Celts. Chalmers says "The Britons were the first, the Saxons were the second people, whose descendants have finally prevailed over the posterity of the other two; and the Irish-Scots were the third race." Professor Bryce will, I think, admit at any rate that there was no great difference in point of time.

Fifthly, I stated that Sutherland was so named by the Scandinavians. "On the contrary," says Mr. Bryce, "in Sutherland there is very little Scandinavian blood." In support of my assertion I may again quote Isaac Taylor, who says: "It may seem strange that the extreme north-western corner of Great Britain should be called Sutherland. No inhabitant of Scotland could have bestowed so inappropriate a name. The name of Sutherland was evidently given by a people living still further to the north. Here, as well as in Caithness, we find numerous Norwegian names." In the map he gives the straths and glens of Sutherland are coloured as Norwegian.

"The Scandinavians," says Burton, "spread over the northern mainland, occupying large tracts in Caithness and Sutherland." "Caithness and Sutherland," says Skene, "became more Norwegian than Scotch," and again, "in 989 Sigurd was in possession of the four provinces of Moray, Ross, Sudrland or Sutherland, and Dali." "The descendants of the Scandinavians," says Chalmers, "may still be distinguished within Caithness and Sutherland, as a distinct race of Gothic people, from the Saxon inhabitants of the more southern districts."

PSYCHO-PHYSICAL RESEARCH in AMERICA.

By JOSEPH JASTROW.

(*Extracts from a letter to Mr. Galton.*)

I THINK it is proper to put John Hopkins University first. Dr. Stanley Hall has charge of the department, and it is the only instance at any American College or University where the head of the philosophical department is a physiological psychologist. The laboratory is only a room in the general biological laboratory, and there will be more rooms, &c., next year. The number of *special* workers is small, it varies from four to six or more. The laboratory is rather well equipped with apparatus: brain models, a chronoscope, Wundt's reaction-time apparatus, a perimeter, colour charts, &c., simple anthropological instruments, and so on. Besides this there is the apparatus invented for the special researches carried on in the laboratory and mostly published in "Mind" during the last three years. The course in psychology covers two years' work (the first devoted to the senses, &c., the second to the higher mental processes) and is very well attended. Dr. H. H. Donaldson will next year take charge of the biological courses preparatory to psychology. Besides this there is a seminary, journal club, and a strong interest in psychological subjects generally.¹

¹ Dr. Cattell writes that there is a fellowship (worth £100) in psychology, usually held but for one year by the same person. Mr. Jastrow held it last year. Good work has been done in the psychological department by Hartwell (left-handedness), Stevens (rhythm), and Donaldson (temperature-sense).

At Harvard, Professor James has a room devoted to research, but he has few or no advanced students, and little has yet been done. His lecture course to undergraduates is very popular under the election system there in vogue. He is in the habit of asking his students to record their own sensations, &c., as for example, with regard to visual imagery, &c. But the interest there has lately been diverted largely into the Psychic Research Society, and the two numbers of the Proceedings of that Society show what they are doing. At the Harvard Medical School Professor Bowditch is deeply interested in such work, and was conducting a series of experiments on the effect of alcohol on the reaction-time when I saw him in April. Besides this there is in Boston, and pretty much everywhere, a strong medical interest in the psychology of the insane. Our medical journals are quite full of psychological topics, and morbid psychology is almost a specialty with some physicians.

At Princetown,¹ there is an elementary course in psychology, largely physiological, also one at the University of Michigan. There will be one at Cornell and perhaps at Columbia College. The University of Pennsylvania has just elected Dr. Cattell Lecturer on that subject, and other institutions will doubtless take similar steps.

With the anthropological work at Washington (*vide* Reports of Bureau of Ethnology) and that of Mr. Putnam at Cambridge you are doubtless well acquainted. Dr. Billings is also putting some psychological apparatus in the Army and Medical Museum. From the educational side an interest is rapidly arising in the development of the mind, and the outlook, especially in New England, is very hopeful.

There is also a strong interest in the psychological aspects of blindness, deaf-mutism, idiocy, &c. Laura Bridgman has had much to do in cultivating this.

The interest in psychic research is intense, and I ought not omit that the "crank" element which is strong in the West, makes all sorts of spiritualistic and other kinds of charlatanry flourish.

PREHISTORIC REMAINS IN SOUTH AFRICA.

Mr. A. A. ANDERSON has just issued a little book under the name of "Terra," full of weighty matter, although we think some of the discoveries claimed by the author, will be much disputed by geologists and astronomers. With that, however, we have nothing to do, it is only the last chapter of the book, dealing with the antiquity of man which will be of interest to anthropologists, and here we find two or three announcements which, unless Mr.

¹ Dr. Cattell informs me of a desire expressed at Princetown College to fit up a laboratory there for psycho-physical research.

Anderson has been greatly deceived, carries the human race in Africa back to a fabulous antiquity. Hitherto the flint implements found in South Africa have been on the surface, or in situations which rendered their antiquity doubtful, but Mr. Anderson believes that he has found flint implements in all respects similar to those found on the surface, at a depth of 70 feet, in sinking a well at Kimberley, and one at Bultfontein in a well 40 feet deep. He also relates the discovery of several flint implements in the diamondiferous blue ground at Kimberley. We will give the description of this discovery in Mr. Anderson's own words.

"At present the depth of the blue is not known, as some parts of the Kimberley mine have been worked down 440 feet At that time (1883) we obtained some of this blue ground from a private company When sorting the coarse gravel we found many of these arrow heads, being easily seen from their red appearance when all the rest was blue. When one of the overseers came to see if any more ground was wanted, we showed him those we had found. He laughed and said they were only common flints; when sorting himself, he found some of the same kind in the mine, where the Kaffirs were picking the blue loose from the great mass upon which they were working, and at our request he said he would bring some, which he did, four very good specimens. This made us inspect the blue that had not been removed or disturbed; and as the Kaffirs were working with their pickaxes, the ground being very hard, we found in the course of the day one broken and one perfect scraper, both of the same description of red stone as the others. In no case did we find any other description of stone mixed with the blue; and two others we found, making in all four obtained *in situ* and eleven in sorting, with several broken ones."

Mr. Anderson describes other similar finds, one "a very good quartz arrow-head was found at the bottom of a diamond-digger's claim, 32 feet from the surface, under a large boulder weighing several tons, on the bed-rock of the ancient river. Again, "at Pniel, Klip Drift, Gong Gong, Waldeck's Plant, and Good Hope, we procured in all 57 specimens, some from the deep sinking of the claims by the river, and on the side of the adjacent hills where the ground was worked down to the bed-rock to the depth of 40 feet, in the ancient river-bed and 81 feet above its present level."

Another interesting discovery is reported by Mr. Anderson, who says:—"Very ancient pieces of broken pottery have been frequently found deep in the ground, which contain much mica, that is not now used by natives in making their pots; several pieces were unearthed in an extensive landslip, that took place on the slope of a hill in the Kalahari Desert, where pottery was never known to have been used by the Bushmen, and no other natives have been known to live in those parts."

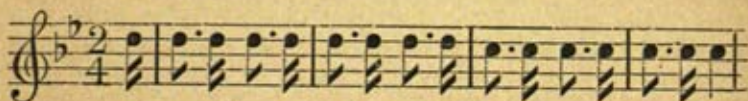
If these "finds," are verified they would carry back the antiquity

of man in South Africa to an unknown age, tallying however somewhat with the discoveries made by General Pitt-Rivers in Egypt.

A. W. BUCKLAND.

AUSTRALIAN TUNES.

IN reference to the melody of Aboriginal Australians near Sydney, taken down by the Rev. G. W. Torrance, and published in the last number of the "Journal," the following extract from Mr. Barron Field's "Geograph. Memoirs," p. 433 (London, 1825), will be of interest. The anonymous author states: "The song is sung by a few males and females, who take no part in the dance. One of the band beats time by knocking one stick against another. The music begins with a high note, and gradually sinks to the octave, whence it rises again immediately to the top."



is divided into thirteen chapters, bearing the following titles: I. Règne Humain; II. Unité de l'Espèce Humaine; III. Origine Première de l'Espèce Humaine; IV. Antiquité de l'Espèce Humaine et de ses Races Fossiles, Populations Actuelles; V. Origine Géographique de l'Espèce Humaine; VI. Peuplement du Globe; VII. Acclimatation de l'Espèce Humaine; VIII. Homme Primitif, Ancienneté des Types Ethniques; IX. Formation des Races Humaines; X. Des Caractères Ethniques en général; XI. Caractères Physiques; XII. Caractères Intellectuels; XIII. Caractères Moraux et religieux.

The second part of the Introduction will be devoted to a discussion of the Classification of the Races of Mankind. It will be followed by a volume on "Les Races Noires," by Dr. E. T. Hamy, a second on "Les Races Jaunes," by M. J. Montano, and a third on "Les Races Rouges," by M. Lucien Biart. The "Bibliothèque Ethnologique" is to include a series of complete monographs, the first of which—"Les Aztèques," by M. L. Biart—has already appeared.

By the courtesy of Professor De Quatrefages a copy of the first part of his Introduction has been placed in the library of the Anthropological Institute. The work may be obtained in London from Messrs. Trübner and Co., of Ludgate Hill.

The ROYAL ETHNOGRAPHIC MUSEUM at DRESDEN.

THE series of publications of this Institution, under the direction of Dr. A. B. Meyer, has been recently enriched by a memoir descriptive of various objects in wood and bamboo from the north-western parts of New Guinea, by Dr. M. Uhle, an Assistant at the Dresden Museum ("Holz- und Bambus-Geräthe aus Nord West Neu Guinea, hauptsächlich gesammelt von A. B. Meyer, mit besonderer Berücksichtigung der Ornamentik." Leipzig, Julius Klinkhardt, 1886). The objects described and figured in this memoir include ornamental woodwork from canoes, images for ancestral worship, amulets, carved spoons, bamboo holders, ornamented arrows, neck rests, &c. Most of the specimens were collected by Dr. Meyer, and all are now deposited in the Ethnographic Museum in the Zwinger at Dresden. Seven folio plates give admirable photographic figures of the objects, and these plates are accompanied by letterpress, in which the writer not only describes the specimens, but enters into a discussion of the character and origin of the ornamentation.

A copy of this interesting memoir has been presented to the Institute.

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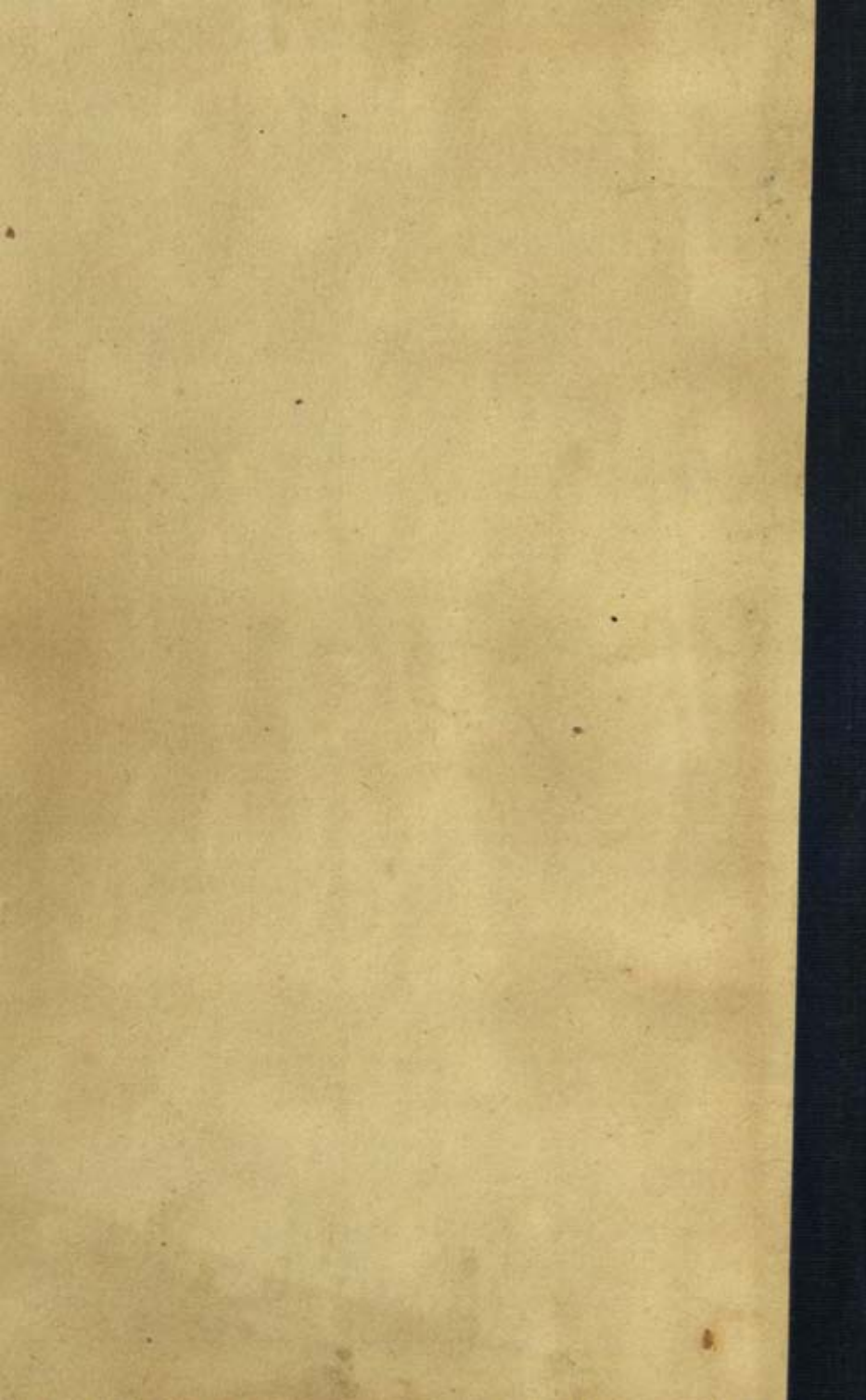
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